FERABOLI

EXTREME LT

EN ***USE AND MAINTENANCE***

*) Valido per Paesi UE
*) Valid for EU member countries
*) Valable dans les Pays UE
*) Gilt für EU-Mitgliedsländer
*) Válido para Países UE

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SUMMARY

CHAPTER 1.....**INTRODUCTION**
CHAPTER 2..... **CERTIFICATION**
CHAPTER 3..... **TECHNICAL DATA**
CHAPTER 4..... **GENERAL SAFETY REGULATIONS**
CHAPTER 5..... **TRANSPORT AND HANDLING**
CHAPTER 6..... **GENERAL DESCRIPTION**
CHAPTER 7.....**ISTRUCTIONS FOR USE**
CHAPTER 8.....**OPERATION IN THE FIELD**
CHAPTER 9.....**MAINTENANCE AND ADJUSTMENTS**
CHAPTER 10.....**"F_bus" CONTROL SYSTEM**
CHAPTER 10-QT *.....**QUICKTRONIC**
CHAPTER 10-ET *.....**EASYTRONIC**
CHAPTER 11.....**TABLES AND DIAGRAMS**
CHAPTER 12..... **PROBLEMS AND CAUSES**
CHAPTER 13.....**ACCESSORIES AND KITS (optional)**

(*) **Inside of the manual you will find the chapter with the instructions regarding the F_bus control instrumentation system based on the model of the terminal that you have purchased.**

1_INTRODUCTION

Dear Client,
Congratulations on choosing a **FERABOLI** product.
The greatest safety, efficiency and working life will result from the complete observance of the instructions contained in this **"Operator's Manual"**.

1.1_OPERATOR'S MANUAL

This manual is an integral part of the machine that you have bought. The suppliers of both new and used machines are obliged to hand over this manual originally provided with the machine.
If this machine is sold again to a third party the manual must be handed over together with it.
If the operator's manual is damaged or lost, request an identical copy from our Spare Parts Service, specifying the number of the manual or, if this is not available, the information stamped on the metal data plate affixed to the machine.
Read the operator's manual carefully in its entirety and if you do not understand some points contact your **FERABOLI** dealer or our Assistance Centre, the addresses of which are given on the last page of this manual.
Inform all possible operators of the contents of this manual since the machine is to be used only by trained expert personnel who are aware of the possible dangers arising from the use and maintenance of the machine.

The manufacturer therefore declines all and any liability for damage due to negligence or failure to observe the contents of the present manual.

ALWAYS USE ORIGINAL SPARE PARTS.

Should the need arise for the supply of original spare parts, contact your **FERABOLI** dealer or our Spare Parts Service.

1.2_GUARANTEE

Reference is made to the general guarantee conditions found enclosed with the purchase contract signed by you.

1.3_USE

The round baler has been manufactured to collect and press into cylindrical bales: hay, semi-dry forage, grass and straw. A single operator on the tractor is capable of carrying out all the various operations.

Any other use of the machine that is not covered by this manual releases FERABOLI S.p.A. from all and any liability for damage to persons, animals or things.

2_CERTIFICATION

2.1_"CE" CONFORMITY

The Extreme LT round baler is a machine with "CE" marking in compliance with the standards of the European Union described in 2006/42/CE Directive and 2004/108/CE Directive (Electromagnetic Compatibility), as shown in the "CE Declaration of Conformity" provided with every machine.

FERABOLI S.p.A. declines all liability arising from use of the machine on products that do not correspond to European standards.

If the machine should be sold to a third party, the declaration of conformity must be handed over together with it.

2.2_IDENTIFICATION

The round baler is supplied with:

- **Operator's Manual**
- **CE Declaration of conformity**
- **Instruction handbook for the cardan shaft**

Every machine is also provided with an identification plate showing:

- **Name and address of the manufacturer**
- **"TIPO" = model of the machine**
- **"N°" = serial number**
- **"Massa kg" = weight of the machine**
- **Machine Designation**
- **Year of manufacture**
- **"CE" marking**

The information shown on the identification plate of the machine must always be quoted in any request for spare parts and/or assistance.
Copy the machine information into the plate reproduced on the back of the cover for ease of consultation.

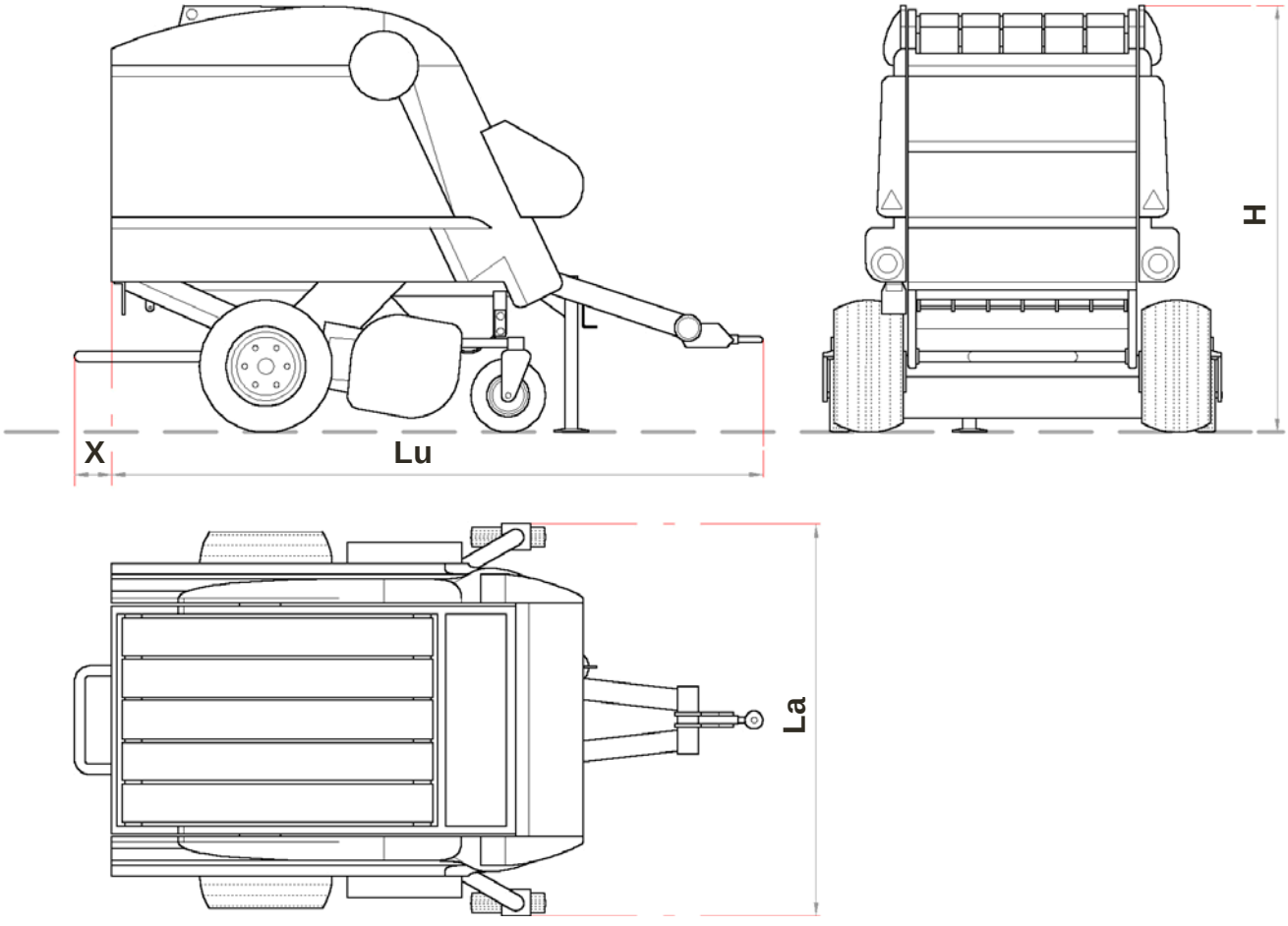
3_TECHNICAL DATA

The technical data contained in the following tables are informative therefore we reserve the right to modify them without obligation to give prior notice.

- All the measurements are expressed in millimetres (mm).
- All the weights indicated are in kilograms (kg).
- The symbol **"-"** indicates a value lying between a minimum and a maximum.

3.1_DIMENSIONS

	LT	LTR	LTC
Length **Lu** (without ejector) *	4180	4180	
Width **La**	2520	2520	
Height **H** with tyres: 400-15.5 or 15.0/55-17	2600	2700	
Height **H** with tyres 11.5/80-15.3	2580	2680	
Height **H** with tyres 19.0/45-17	2590	2690	
***** Length **X** with ejector	250	250	



3.2_WEIGHTS

FEEDER			
	LT		
Binding	**Twine**	**Net**	**Twine/Net**
Pick-up LT M	2410	2510	2550
Pick-up LT L	2440	2540	2580

ROTARY FEEDER			
	LTR		
Binding	**Twine**	**Net**	**Twine/Net**
Pick-up LT M	2800	2900	3040
Pick-up LT L	2830	2930	3070

CUT 13			
	LTC		
Binding	**Twine**	**Net**	**Twine/Net**
Pick-up LT M	2910	3010	3050
Pick-up LT L	3020	3040	3090

ADDITIONAL WEIGHTS			
	LT	**LTR**	**LTC**
Ejector	52		
Cardan shaft 3600120	25		
Cardan shaft 3600076		25	
Cardan shaft 3600049	25		

3.3_PICK-UP UNIT AND TRANSPORT ASSEMBLY

PICK-UP		
	M	**L**
Max. collection width	1725	2000
Width between tines	1593	1869
Pitch between tines	69	
Roll-holder diameter	250	
N°. bars for roll-holder	4	
N°. tines for bar	24	28
N°. of overall tines	96	112
Support wheels	fixed	
Dimensions of wheels /n° wrappers	16.650/10	
Adjustment of working height	mechanical 13 positions	

CONVEYING UNIT		
	FEEDER	
N°. of tines	16	
Pitch between tines	69	

		CUT 13
N°. of knives		13
Pitch between knives		77
Knives control		electric
Protection of knives		simple, spring-type
Feeding rotor		3-point star

3.4_BINDING

	TWINE	**NET**	**FILM**
Twine binder	Double wire		
Yarn count of twine	500÷1000		
Twine skeins	n°.6		
Reel diameter net		250÷300mm	
Yarn count of net		12÷16 g/m	
Plastic film			---
Command	electronic	electronic	
Max n. of conveyable reels (with single binder)	12	3	3
Max n. of conveyable reels	wire = 12 wire + net = 6+1	3	3

3.5_BELTS

Belts for machine	5
Width	218
Length	10470
Fasteners	MATO U24BS n°.17

3.6_TYRES

		Ply	Index radius (mm)	Speed (km/h)	Wheel capacity (kg)	Pressure (bar)	External diameter (mm)
Series:	400/60-15.5	10-14 P.R.	380	40	2240÷2745	2,5÷3,5	875
Option:	15.0/55-17	12-14 P.R.	410	40	2083÷2300	3,1÷3,7	850
	11.5/80-15.3	12-14 P.R.	410	40	1930÷2187	4,1÷4,75	845
	19.0/45-17*	10-14 P.R.	390	40	2124÷2800	2,25÷4,0	850

3.7_CARDAN SHAFTS

	LT	LTR	LTC
Series:	3600120 BYPY 654 (OC+FV42 1350Nm)	3600076 BYPY 656 (OC+SB6)	
Option:	3600049 BYPY 656 (OC+SB6)		

3.8_TRACTOR REQUIREMENTS *

	LT	LTR	LTC
PTO speed	540 rpm		
Required power minimum kw-cv	45÷60	58÷80	
Hydraulic system	n°.1 double-acting distributor + n°.1 single-acting distributor		
Necessary oil flow rate	25 liter/1'		
Electric system	12V= / negative mass		
Speed transport by road max.	40km/h		

(*) *With tractor having a cabin: if a tractor without the cabin is used, ask the FERABOLI company for the special "ZMP2015 - Hydraulic Line Protection Extreme".*

3.9_CHARACTERISTICS OF THE BALE

Diameter	500÷1650
Width	1200
Weight of hay bale	300÷625
Weight of straw bale	280÷420
Weight of grass bale	600÷1235
Hourly production	25÷45

3.10_FEATURES OF THE "F_bus" CONTROL SYSTEM

	QuickTronic	EasyTronic
Power supply	11÷15 V Dc	11÷15 V Dc
Controls: membrane keyboard	23 keys	9 keys
Display	LED	Graphic LCD: 128x64 pixel
Back lighting		White LED
Microprocessor	16 bit 24Mhz	16bit 24Mhz
Memories	Flash + Static RAM + Eeprom	Flash + Static RAM + Eeprom
Buzzer	Buzzer	Internal Buzzer
Degree of protection	IP 54	IP 65
Operating temperature	0÷50	0÷50
Storage temperature	-10÷70	-10÷70
Relative humidity	100%	100%
Vibration test (x-y-z per 1hr)	20÷50Hz → 1.0G/51÷300Hz → 0.5G	20÷50Hz → 1.0G/51÷300Hz → 0.5G
Container	Aluminium + steel	ABS
Colour	Black	Black
Method of fastening	Bracket	Magnet
Overall size (max.)	165x 142x 48	190x 105x 90
Weight	750g	420g
Conforming to CE regulations	Yes	Yes

	MODULES (sensors, motor controls, etc.)
Power supply	11÷15 V Dc
Degree of protection	IP 65
Operating temperature	-20÷70
Storage temperature	-30÷80
Relative humidity	100%
Vibration test (x-y-z for 1hr)	20÷50Hz → 1.0G/51÷300Hz → 0.5G
Conforming to CE regulations	Yes

4_GENERAL SAFETY REGULATIONS

In addition to the regulations contained in this operator's manual, observe the general regulations for safety and accident prevention in force in your Country.
This machine has been designed and manufactured for the maximum safety at work. Maintenance of these safety conditions is obligatory for the user.
Therefore, read this manual very carefully especially the safety regulations and with great attention to those operations that are potentially very dangerous; if you do this while working it will be too late!

FERABOLI S.p.A. declines all and any liability for failure to observe the safety and accident prevention regulations provided in this manual.
All and every liability for damage caused by the improper use of the round baler or modifications made without authorisation is also declined.

4.1_TERMINOLOGY ADOPTED

When you see one of the following symbols, read and memorise the message, and inform all the operators.

This is the ALERT symbol for personal safety; it indicates a possible situation of danger.

In this manual all the **ALERT** personal safety points are shown by this symbol and associated with a **"signal word"** which varies depending on the immediacy or potential of the dangerous event:

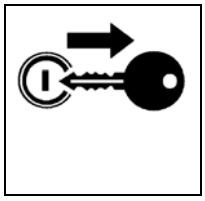
WARNING!:
The word **WARNING** indicates a potentially dangerous situation that may result in death or serious injury if not avoided.

CAUTION!:
The word **CAUTION** indicates a potentially dangerous situation that may result in minor or moderate injuries if not avoided.

This is the ALERT symbol for protecting mechanical parts; it indicates a possible situation of danger.

IMPORTANT!:
In association with the word **IMPORTANT**, warns that if the operations are not carried out correctly serious damage to the machine may result.

This is a warning symbol for the operator; it reminds the operator to switch off the tractor and remove the key from the dashboard.



Whenever this symbol is found in the operator's manual, you must switch off the tractor and remove the key from the dashboard before carrying out the operations described in the symbol.

FERABOLI S.p.A. declines all liability for damage due to failure to observe these warnings.

This is a symbol denoting *"**Note:**"*
This symbol requires the operator to pay greater attention in reading and memorising the information given!

4.2_SAFETY WARNINGS

Before putting the machine into operation:

- Make sure that you have a perfect knowledge of the controls and their functions.
- Conduct a regular check of the perfect condition of the entire machine: all the safety and protection devices.
- All the accident prevention protection guards must be mounted and fixed in accordance with the manufacturer's instructions and must not be tampered with.

WARNING! It is absolutely forbidden for the round baler to be used by persons who have not read and assimilated the contents of this manual.

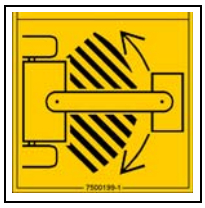
4.2.1_WARNINGS TO THE INDIVIDUAL

Pay attention to the danger symbols shown in this manual and on the machine itself; the adhesive danger signs must always be clearly visible.

- Make sure that they are always kept clean and replace them if they have deteriorated or are difficult to read.
- You will find the position and the list of all the danger signs in the paragraph *"4.4_ Adhesive safety signs"*.

WARNING!
CAUTION!

- **Never leave the machine unattended during work.**
- **Never leave the tractor unattended with its engine running.**
- **Do not allow the machine to be used by minors or persons who are not competent, or not in good health or who do not have a valid driving license.**
- The radius of action of the machine is to be considered a **dangerous area**: before putting the machine into operation make sure that there are no persons or animals around the work area, otherwise stop the machine and clear the area.
  The person using the round baler is liable towards third parties for any damage caused by the machine inside the radius of action.



  During operation of the machine it is absolutely forbidden to approach the mechanical parts, touch the moving parts or interpose oneself between them.
  Keep your face, hands and feet away from moving parts; stay at a safe distance.

- Do not stand behind the machine, the tailgate may be open and the bale may be ejected.

- The area in front of the pick-up is very dangerous; when the machine is in operation, **never** introduce the forage using the hands, feet or the help of any other object.

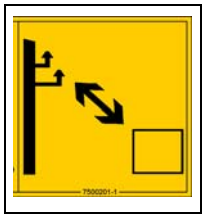
CAUTION! In the event of product accumulation in the feed zone:

- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the "F_bus" system.**

- **Follow the instructions shown in the paragraph *"8.7_Unblockage of the product"*.**

- Load the twine or net wrap only with the tractor engine off, and after cutting off the current to the “F_bus” control unit.
- Do not use the controls, tubes and other protruding parts of the machine to hang things on.
- Assemble, operate and detach the cardan shaft always respecting the information and safety rules for use of the cardan shaft contained in the booklet provided by the manufacturer of the cardan shaft and delivered together with it.
- It is absolutely forbidden to transport persons or animals on the machine or tractor.
- During maintenance and/or repair work it is obligatory to wear protective clothing, cut resistant gloves, safety footwear and goggles.
- Do not wear clothes that could get caught on the moving parts. If there is a risk of objects being thrown out, wear a protective helmet fitted with a visor.
  For further information consult the paragraph *“4.6_Clothing”*.

- Take great care to maintain a minimum safety distance when operating in the vicinity of electrical power lines; the machine is made mainly of metal and therefore if it comes into contact with an electrical line or if there is a discharge between the line and the machine the operator could be electrocuted with possible fatal consequences.
  If it is necessary to operate in the vicinity of electrical transmission lines contact the competent electricity company.



- Unload the bales on flat ground or in a suitable position if the ground is sloping.

- High pressure hydraulic oil can penetrate the skin and cause serious injury. Before detaching any tubes or doing any checks the system should always be depressurised.
  If any hydraulic oil under pressure should penetrate the skin go immediately to hospital otherwise there is a serious risk of infection.

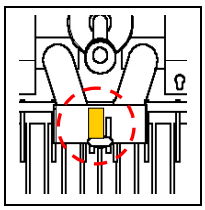
FERABOLI S.p.A. declines all liability resulting from failure to observe these safety warnings.

4.2.2_WARNINGS FOR THE MACHINE

WARNING!
CAUTION!

- The hydraulic couplings shall always be kept clean. To prevent them from becoming dirty or damaged, after use always refit the protective plastic cover provided at the time of purchase.
  Check and if necessary replace any damaged tubes or fittings; all flexible tubes should be replaced in any case five years after the date stamped on the tube.
  Before re-pressurising the system check that the tubes and connections are tight; use a piece of cardboard or absorbent paper to check for possible leaks.
- Each cardan shaft is provided with an operating and maintenance manual supplied by the manufacturer of the cardan shaft. The protection of the cardan shaft, tubes and covers must be mounted and in perfect condition.

Note: Maintenance work on the cardan shaft must be done scrupulously following the instructions given in the booklet supplied together with the cardan shaft by the manufacturer.



Before inserting the PTO make sure that:
- the number of turns corresponds to the required number (refer to the decal located on the steering bar of the machine).
- the direction of rotation is the same as that indicated by the adhesive safety sign.

- **NEVER insert the PTO before starting the tractor motor.**
- Stop the PTO during the turns at the end of the swathes and any other tight turns.
- When the machine is detached from the tractor position the cardan shaft on the special support.
- Never start a bale if the tailgate is not completely closed; check this condition also on the display of the control unit.

WARNING!: FIRE RISK
Remove the accumulated product regularly to reduce the risk of fire and to prevent material from winding around the mechanical parts of the machine.

If the bale should catch fire:
1) Immediately expel the bale and keep the tailgate open.
2) Move the tractor and machine away from the product still to be collected and any other inflammable material.
3) Put the fire out using the extinguisher, advised as part of your equipment.

There must always be an extinguisher on the tractor, especially if you are working on a dry product.

- Repairs to the wheels and tyres must be done by competent specialised personnel having the appropriate tools.

- **Never drive on public or private roads with a bale in the chamber of the round baler.**
  Always empty the chamber before leaving the field. Make sure that the tailgate is closed and locked in position. Driving on the open road must be done in compliance with the traffic regulations in force in the Country where the machine is used.
  It is very important to remember that the capacity for road holding, maintaining direction and braking may be influenced considerably by the load being towed.
- Before towing the machine withdraw the parking jack into the position for transport.

FERABOLI S.p.A. declines all liability resulting from failure to observe these safety warnings.

4.3_MAINTENANCE IN SAFETY

WARNING!

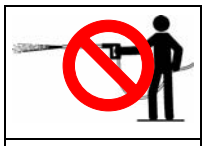
IMPORTANT!

Before making any adjustments or doing any maintenance, service or repair work and before leaving the machine unattended, take the following precautions:

1) **Stop the machine and detach the PTO.**
2) **Rest the pick-up on the ground.**
3) **Always turn off the tractor motor and remove the keys; apply the handbrake.**
4) **Ensure that all the moving parts of the machine have been stopped completely**
5) **Switch off the "F_bus" system**

- It is absolutely forbidden to remove or tamper with the safety devices because these have been designed and installed for your protection and safeguard. If they should get damaged replace them before using the round baler again.
- Check frequently that the nuts, screws and bolts are correctly tightened.
- Check frequently and regularly the state of wear of the bearings, rollers, chains and gears.

Do not carry out any maintenance or cleaning work if the tractor has not been turned off first and the keys removed from the dashboard.
Remove any dirt that might have accumulated from all the moving parts of the machine.



- Do not use high pressure jets for cleaning the machine; this may cause serious damage to the mechanical parts.

- Take careful note of the precautions to be taken for welding work.
- Detach the machine from the tractor, remove any residual forage and make sure that there are no plastic materials nearby in order to avoid fire risk.

- It would be advisable to have a fire extinguisher at hand just in case.

- Use the oils advised.

- Carry out the maintenance scrupulously according to this manual and have worn or damaged parts replaced by specialised personnel.

USE ORIGINAL SPARE PARTS ONLY.

- Spare parts must correspond to the requirements established by the manufacturer.
- Use only the cardan shafts indicated by the manufacturer of the machine.

The table below shows the maximum values on the towing eye depending on the machine model:

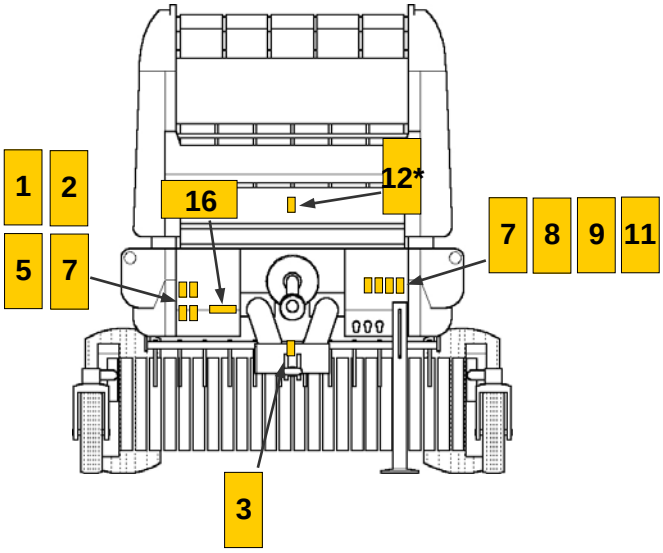
MAX VALUES ON TOWING EYE (kg)			
	LT	**LTR**	**LTC**
Load	460	490	

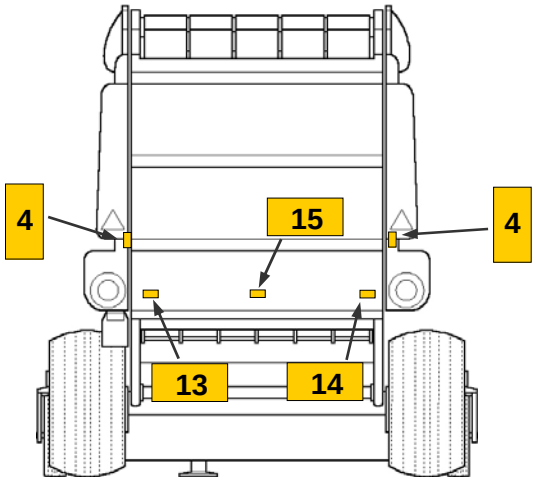
WARNING! This operator manual with instructions for using the round baler must be read memorised and kept for the entire life of the machine.

FERABOLI S.p.A. declines all liability deriving from failure to observe these warnings.

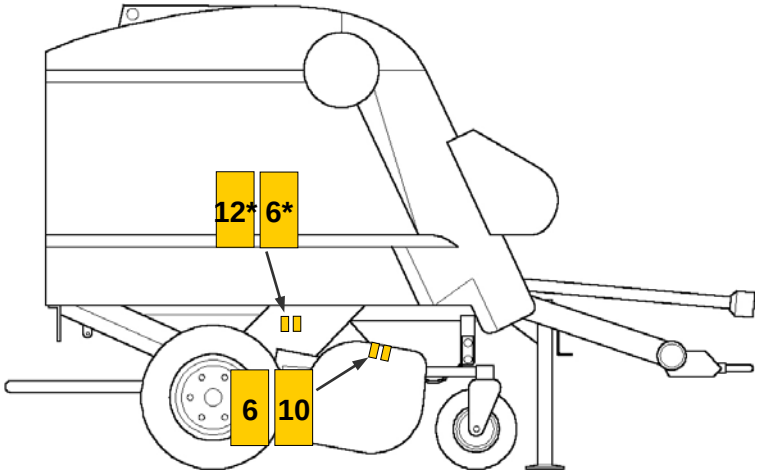
Diagram: LOCATION OF PICTOGRAMS ON THE ROUND BALER

**** only with net wrapper***

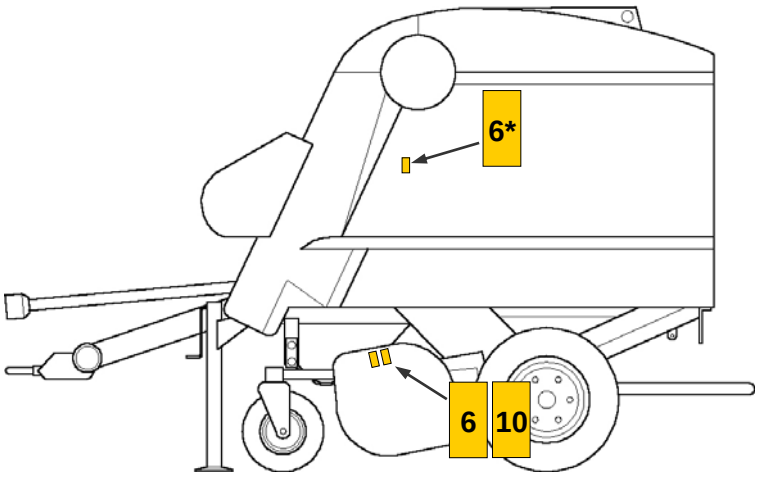




**** only mod.LTR and LTC***



**** internal***



4.4_SAFETY SIGNS

Adhesive signs have been affixed to the machine containing important messages regarding personal safety. Their purpose is to call the operators attention to the health and safety at work rules and warn against possible dangerous situations during work and maintenance.

- The safety signs typically have black and red pictograms on a yellow background.
- They must always be kept clean and legible and must be replaced whenever damaged or peeling off.
- If the parts of the machine to which they are affixed are replaced or painted they must be replaced as before.
  For this purpose each adhesive sign bears a code number so that it may be ordered from the Spare Parts Service. Ask the Spare Parts Service for these adhesive signs quoting the relative codes.

To obtain the complete series of adhesive safety signs for the Extreme round baler ask our spare Parts Service quoting the relevant code number:

- **7Z00648 "CE Safety decal - Extreme mod.LT"**
- **7Z00649 "CE Safety decal - Extreme mod.LTR and LTC"**

All the adhesive safety signs present on the round baler are illustrated and described on the following pages and represented in the diagram: ***"Location of pictograms on the round baler"***.
Read carefully the meaning of the signs and inform your co-workers and whoever may approach the machine during work and maintenance.

4.4.1_PICTOGRAMS

This is the description of the adhesive safety signs placed on the machine and represented in the diagram **"Location of the pictograms on the round baler"**, shown on the previous page:

1) cod. 7500185-1
CAUTION! Before putting into service, at the beginning of each season and before doing any work on the machine, read and bear in mind the instructions for use and maintenance given in this operator manual.

2) cod. 7500186-1
CAUTION! Before doing any repair or maintenance work on the machine, turn off the tractor motor, remove the keys from the dashboard and read the operator manual.

3) cod. 7500187-1
CAUTION! Machine suitable for tractors with power take-off at 540 rpm and one direction of rotation.

4) cod. 7500198-1
WARNING! Do not pass by or stand under the tailgate when it is raised to avoid being crushed if the special safety locks have not been applied.

5) cod. 7500199-1
WARNING! Do not enter the manoeuvring space between the machine and the tractor when the motor is running. This area is particularly dangerous.

6) cod. 7500203-1
WARNING! Before doing any work wait until all the parts of the machine are completely still and use appropriate methods to block any undesired movements.

7) cod. 7500207-1
WARNING! Never feed or remove material by hand in front of the pick-up unit when parts are in motion. This could result in the upper limbs, or more seriously the person, becoming trapped.

8) cod. 7500208-1
WARNING! Before doing any work on the hydraulic system consult the operator manual. Oil under pressure can cause serious infections.

9) cod. 7500210-1
WARNING! Do not remove the guards and do not touch parts, which may also suddenly move under their own weight and cause crushing of the upper limbs.

10) cod. 7500221-1
WARNING! Do not stand near the machine. This could result in the crushing or cutting of lower limbs due to the weight of the machine or lowering of its parts. Keep at a safe distance.

11) cod. 7500724
WARNING! Before entering the bale forming chamber to do any operations or for other reasons, lock the hydraulic jacks by turning the valve to the closed position.

12) cod. 7500726
WARNING! Danger of cutting hands.

13) cod. 7500197-1
WARNING! Do not stand behind the machine. Risk of being crushed by sudden movements.

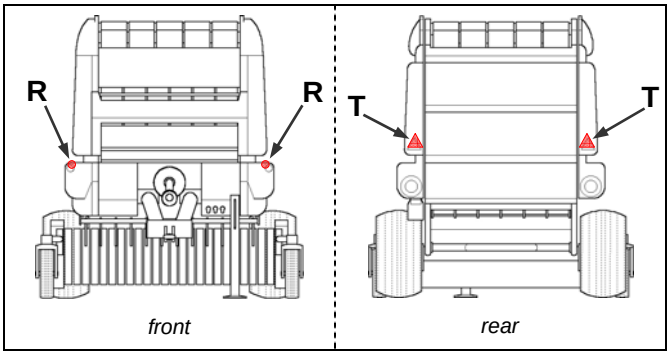
14) cod. 7500201-1
WARNING! Take great care when working near electrical lines.

15) cod. 7500212-1
WARNING! Do not stand behind the machine when the bale is ejected. Keep at a safe distance.

16) cod. 7500781
WARNING! Danger of getting caught and being dragged by the cardan shaft.

4.4.2_REFLECTORS

Two types of reflex reflectors are located on the round baler so that it can be seen more clearly during road transport:
R) Round reflectors (front).
T) Triangular reflectors (rear).



4.4.3_CARDAN SHAFT DECAL

An adhesive sign is affixed to the cardan shaft to draw the operator's attention and remind him/her of the safety rules for using the cardan shaft.

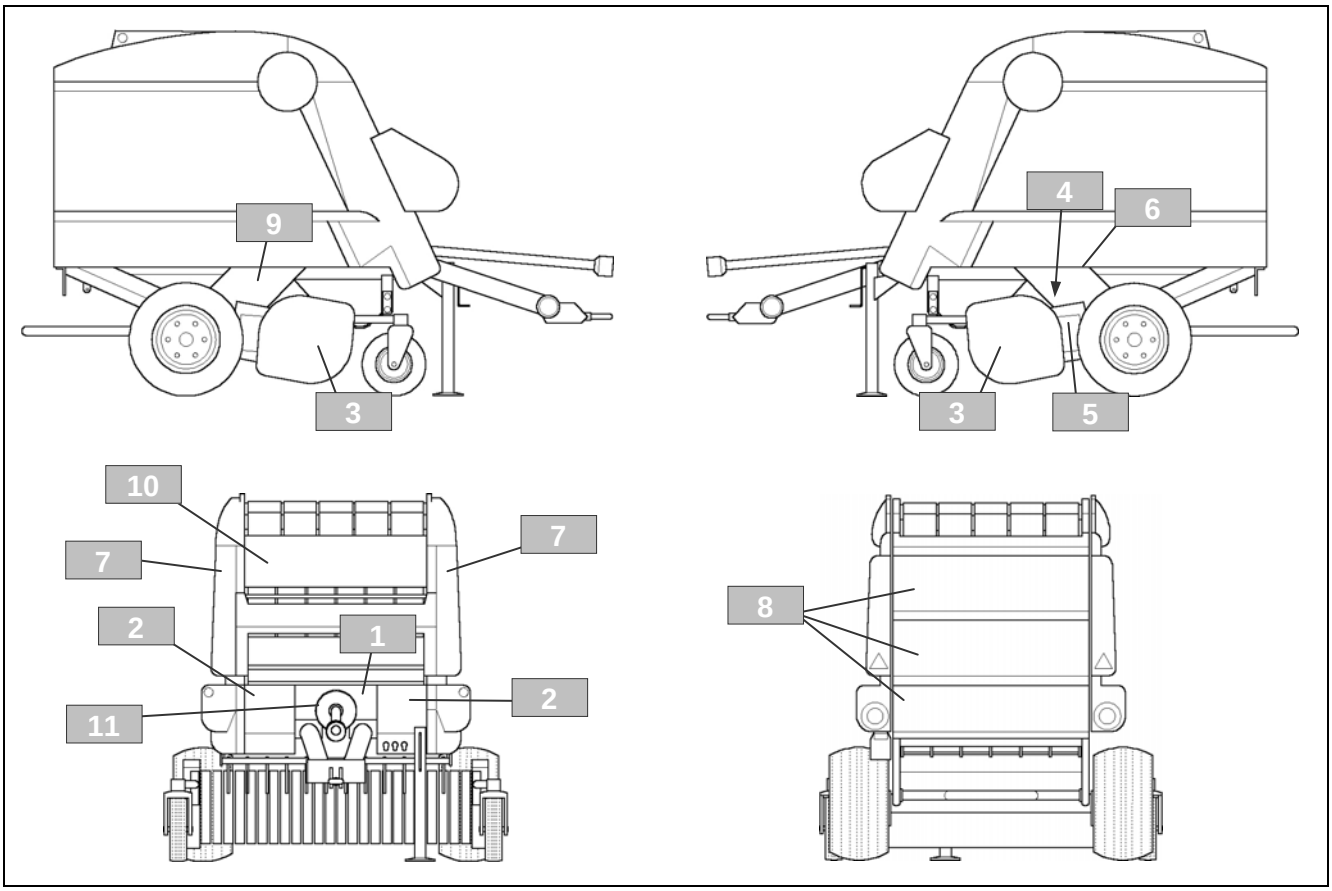
4.5_SAFETY DEVICES

The machine is provided with safety devices in order to ensure a more correct use without risks in normal working conditions.

<u>WARNING</u>! Before starting work make sure that all the safety devices are intact and in place.

4.5.1_PROTECTION GUARDS

The machine is provided with protection guards to protect the operator from moving mechanical parts and to protect the parts from accidental entry of foreign bodies:



1) Protection guard of the deviation box.
2) Protection guard of the shafts.
3) Pick-up protection guard (right and left).
4) Pick-up safety protection guard (mod.LT)
5) Protection guard of the pick-up unit (left side).
6) Protection guard of the large roller.
7) Side covers.
8) Tailgate rear protection guards to protect the belts.
9) Protection guard (mod.LTR and LTC)
10) Front protection guard to protect the belts.
11) Protective covers of the cardan shaft /transmission box.

The lateral gull-wing door protection guards are provided with a safety lock that ensures perfect closing of the protection guard with the machine and thus prevents accidental opening during work or transport.

- To open the protection guards a 13mm spanner is required.

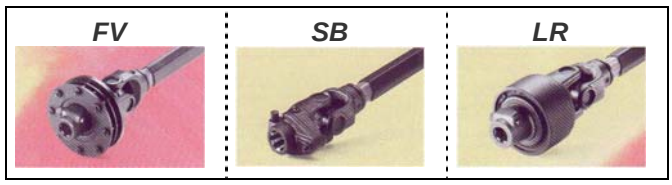
<u>WARNING</u>! Before removing any of the protection guards:

- **Stop the machine.**
- **Turn off the tractor and remove the keys from the tractor dashboard.**

4.5.2_CARDAN SHAFT SAFETY

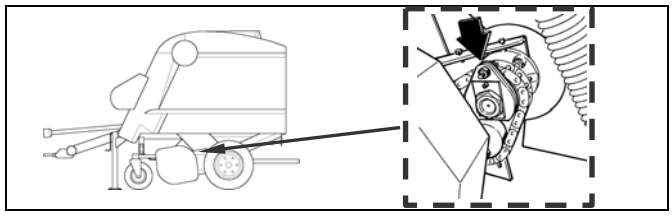
Each cardan shaft is provided with a safety system to protect the mechanical parts from high pickup voltage torques and maximum twisting moments:

- ***"FV"*** = with clutch torque limiter.
- **"SB"** = with shear bolt.
- ***"LR"*** = with automatic torque limiter.



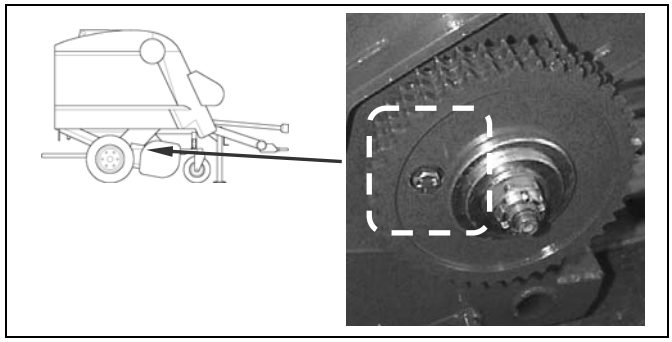
4.5.3_PICK-UP TRANSMISSION SAFETY

The pick-up transmission is provided with a shear bolt torque limiter against overloads and foreign bodies.



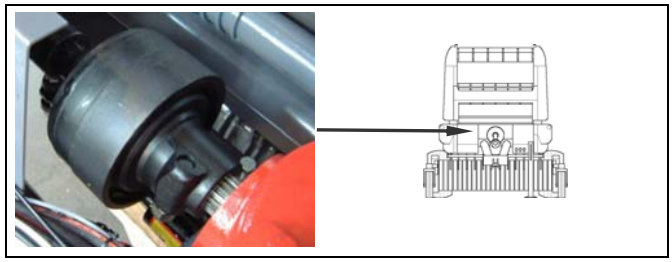
4.5.4_MECHANICAL TRANSMISSION SAFETY DEVICE (mod.LTR and LTC)

The drive transmission to the cutter is provided with a shear bolt torque limiter against overloads and foreign bodies.



4.5.5_AUTOMATIC TRANSMISSION SAFETY DEVICE "AFC" (optional - mod.LTR and LTC)

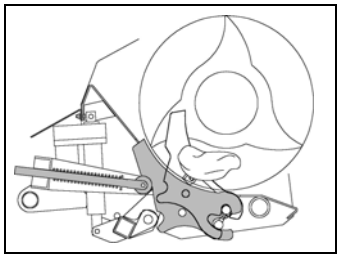
On machines provided with a cutting system it is possible to install an automatic overload control system called **"AFC"** on the shaft coming out of the transmission box towards the feed rotor.



This device interrupts power transmission when there is an overload in order to prevent damage to the machine, the cardan shaft and the tractor.
The **"AFC"** automatic limiter does the same job as the safety bolt with the advantage that it does not require the replacement of the sheared bolt and allows the power to be re-engaged automatically.

4.5.6_BLADES (mod.LTC)

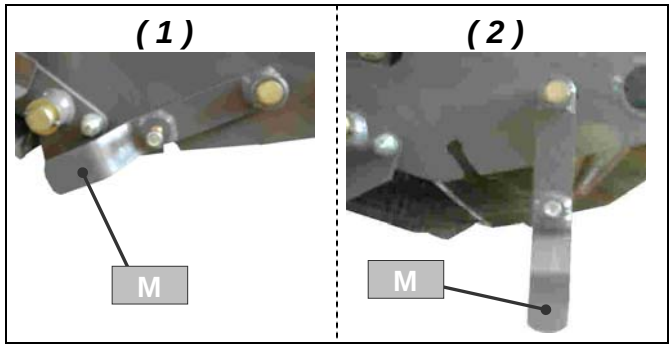
As protection against the entry of foreign bodies into the machine (stones, sticks, etc.) that may cause the blades to break, each blade is mounted on a retractable spring system that allows the blade to lower automatically and then to return automatically to the work position.



4.5.7_BLADE SECURING SAFETY DEVICE (mod.LTC)

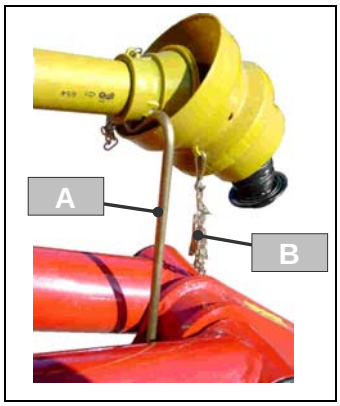
The handle **"M"** secures the blades of the cutting system during operation to prevent them from accidentally entering the bale forming chamber.

- **Position "1" = blades secured.**
- **Position "2" = blades free.**



4.5.8_CARDAN SHAFT SUPPORT

A) This is for the cardan shaft to rest on when it is not connected to the tractor and thus to protect it from damage.



4.5.9_CARDAN SHAFT SAFETY CHAIN

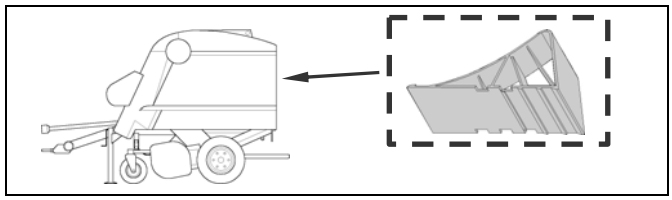
B) This prevents the rotation of the cardan shaft protection guards during work. Attach it to the steering bar.

4.5.10_SUPPORTS AND CONDUIT GUIDES

These support hydraulic tubes, electrical cables and wiring.

4.5.11_PARKING CHOCKS

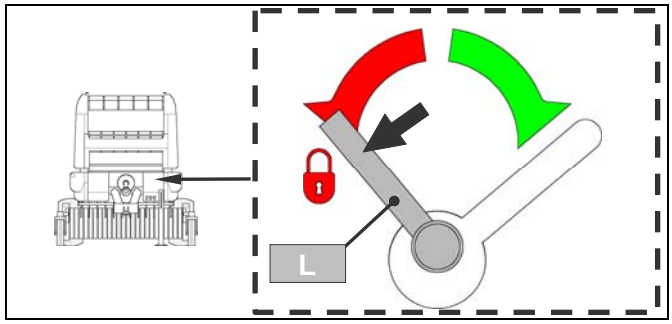
These are place under the tyres to block the machine and prevent any accidental movements when not in use and whenever it is necessary to immobilise the machine for repairs, maintenance or cleaning.



4.5.12_TAILGATE SAFETY LOCK DEVICE

There is a safety device to lock the tailgate in the open position thus avoiding accidental closing when the operator is inside the machine for maintenance or repair work.

- With the door open, turn lever ***"L"*** towards the red arrow, to the stopped position **(lock closed)**, as shown in the figure

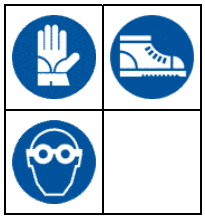


<u>IMPORTANT</u>! Remember to disengage the tailgate safety device by turning the lever to its original position before closing the tailgate.

4.6_CLOTHING

- During work wear suitable clothing
- never wear baggy clothes that flap as these could get caught in the mechanisms and moving parts of the machine.

- Long hair must be gathered.



During maintenance and repairs it is obligatory to use protection gear such as:

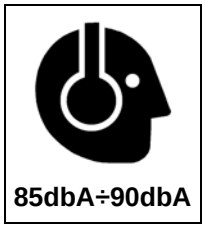
- cut resistant gloves,
- safety footwear,
- goggles.

Dust or substances harmful to the respiration may be produced during work or maintenance. It is advisable to use suitable personal protection equipment

4.7_SOUND LEVELS

<u>CAUTION</u>! Observe the regulations in force in your Country regarding the acoustic protection to be used.

In some circumstances the noise level produced may exceed 85dbA÷90dbA. In these cases it is advisable to use suitable personal protection equipment.



4.8_ECOLOGY AND POLLUTION

<u>CAUTION</u>! Respect the laws in force in your Country regarding the use and disposal of products used in the operation, maintenance and cleaning of the machine.

- Whenever you drain oil from the various mechanical parts and hydraulic system and any other substance toxic and/or dangerous to the environment try to avoid leaks.
  Keep these substances in a safe place until they can be disposed of correctly according to the regulations in force and availability of special disposal facilities.
- Dispose of any residual packing materials of the machine in the special containers for separate rubbish. If the machine is scrapped observe the anti-pollution laws of your Country.

5_TRANSPORT AND HANDLING

WARNING!:

- **Never use the machine as a means of transport for things and/or people.**
- **It is strictly forbidden to tow the round baler with bales on board.**
- **Do not operate the round baler when it is being towed**

The machine must be towed as follows:

- **Machine unloaded.**
- **All components in position for transport.**
- **All safety devices engaged.**

- The round baler can be towed on the roads by a tractor at a speed not exceeding 40Km/h.
- The machine is hooked onto the rear hook of the tractor using the towing eye attached to the front steering bar of the round baler with the special towing rod and safety pin *"7.2_Hook up to the tractor for towing"*.
- Connect the electrical system and check that all the indicator, parking and stop lights are working correctly.

Before towing:

- Raise the pick-up to the transport position (all the way up) and close the valve (closed position, *"7.4.3_Connection of the hydraulic system"*).
- Raise the rest foot to the transport position, *"7.2_Hook up to the tractor for towing"*.
- Do not connect the quick release couplings of the round baler to the tractor.
- During transport the cardan shaft is **disconnected** from the tractor and must be secured to the steering bar.
- If it is necessary to tow the machine over a long distance it may be loaded on a lorry or railway cars.

5.1_LOADING BY RAMP

It is forbidden to use ramps for loading and unloading the machine.

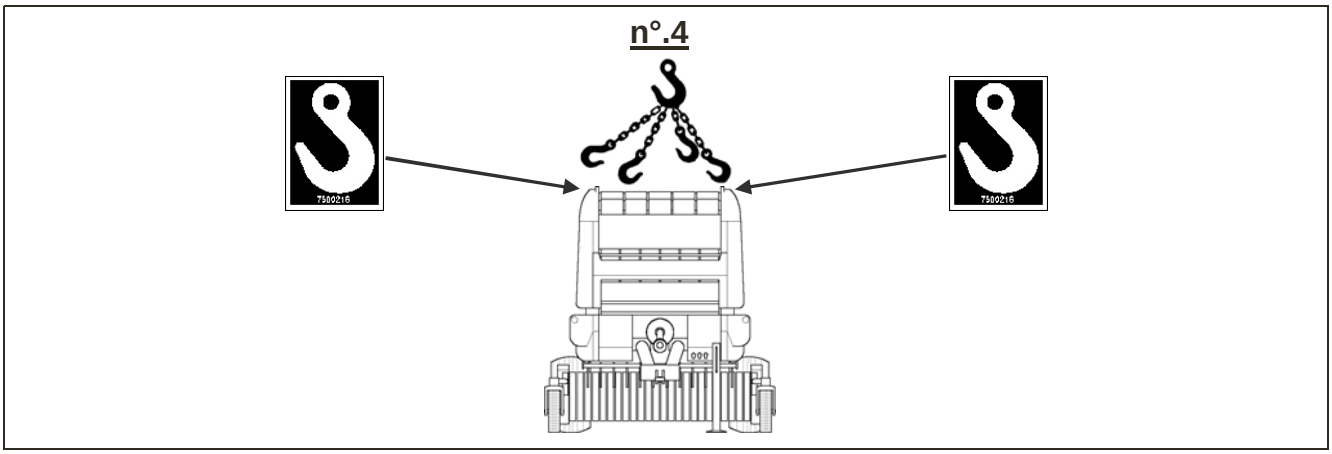
5.2_LOADING BY CRANE

<u>WARNING</u>! Before raising the machine make sure that it does not contain any bales.

To raise the machine from the ground to the loading level, if there are no loading ramps available, use a crane of sufficient capacity; make sure that you have a crane and a load equalising arm of suitable capacity for raising the machine *"3.2_Weights"*.
Use of all four points of attachment for correct safe loading is compulsory.

<u>IMPORTANT</u>!

- **The four attachment points for raising the machine are clearly visible and marked with special adhesives code 7500216.**
- **Attach the machine only at the four points indicated by the adhesive signs to avoid damage.**



FERABOLI S.p.A. declines all liability arising from damage to the round baler caused by incorrect attachment for lifting.

Raise the machine with extreme care and move it slowly, without jerking, onto the lorry or railway car.

<u>WARNING</u>! Raising and transporting the machine can be very dangerous if not done with the greatest of care, therefore:

- **Make sure that the means available are in good working order and suitable for the load.**
- **Clear and cordon off the area in which transferral is to take place.**
- **Make sure that the area in which you are working has been cleared and there is an escape route, i.e. sufficient space to move out of the way quickly should the load fall.**
- **Keep onlookers at a distance.**
- **Do not touch suspended loads and remain at a safe distance.**
- **During transport the loads must not be raised more than 20 centimetres above the ground.**

<u>CAUTION</u>! The level on which it is intended to load the machine must be perfectly flat to avoid possible shifting of the load.

Once the machine has been loaded on the lorry or railway car it is necessary to secure it to the surface on which it stands with cables or chains using the same attachment points and anchoring points located on the same surface and to block the wheels with the chocks.

<u>CAUTION</u>! Make sure that there are no parts of the machine protruding beyond the maximum overall dimensions permitted by the transport.

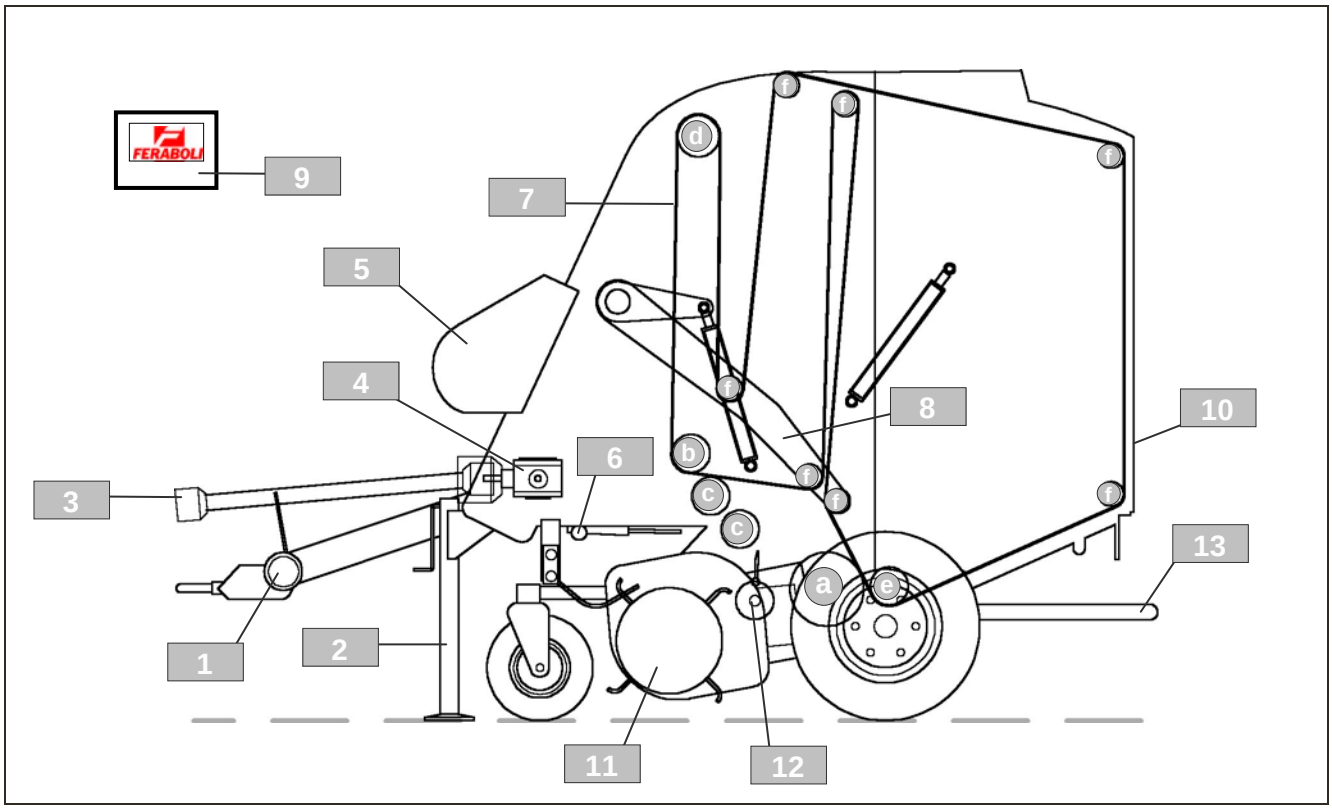
After transport and before detaching the machine from all its attachments, make sure that its state and position do not constitute a danger.
Then remove the packing and proceed with unloading using the same equipment, methods, attention and care as in the loading operations.

6_GENERAL DESCRIPTION

The round baler carries out the following operations:

- Gathering of forage already cut in swathes
- Pressing into a cylindrical shape (bale)
- Bale binding
- Ejection of the bale onto the ground

The machine consists of a structure mounted on a frame, including all the working parts, supported on an axle with wheels for movement and has a steering bar with a hook up to the tractor.
The electrical system controls the control unit and lighting system for road transport.
The hydraulic system is driven by coupling the connection tubes of the round baler to the single and double action connection fittings on the tractor.
A cardan shaft connected to the tractor and the transmission box on the machine transmits movement to all the moving parts.



6.1_MAIN COMPONENTS OF THE ROUND BALER

1) Steering bar
2) Parking jack
3) Cardan shaft
4) Deviation box
5) Net wrapper
6) Twine binder
7) Belts
8) Primary belt stretcher
9) Terminal of “F_bus” control system
10) Tailgate
11) Pick-up
12) Transport unit

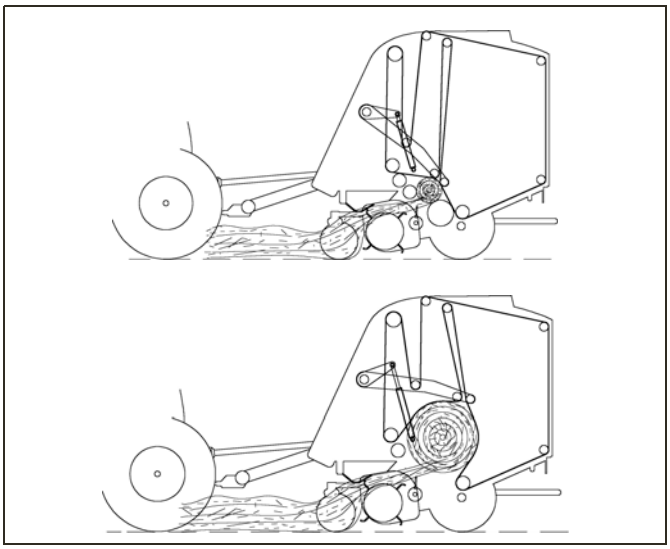
- Feeder (mod.LT)
- Rotary feeder (mod.LTR)
- CUT 13 (mod.LTC)

13) Ejector

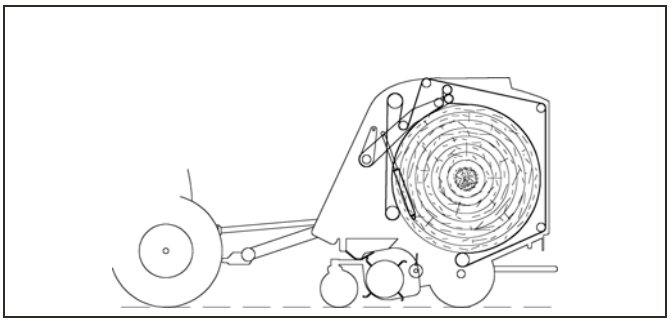
a) Large roller
b) Motor smooth roller
c) Wing rollers
d) Rubberized roller
e) Tailgate idler roller
f) Idler rollers

6.2_DESCRIPTION OF THE WORK PROCESS

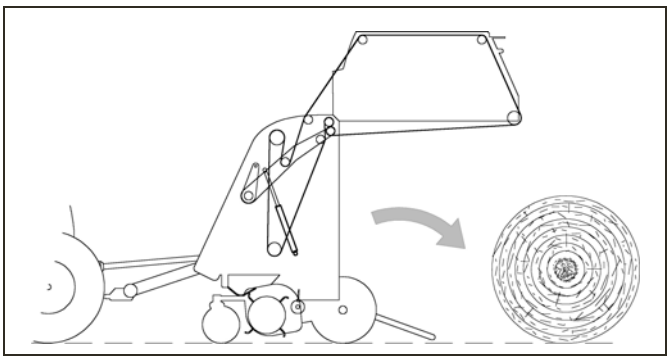
The pick-up gathers the forage ready for collection in the swathes and, with the help of the side aprons and the two screw feeders on the sides, the forage is gathered into a band of width corresponding to that of the gathering chamber.
An oscillating comb (round baler mod.LT), or a rotor (round baler mod.LTR), or a cutting unit with rotor and blades (round baler mod.LTC) transport the product in the compressing chamber.
Here, by means of belts and rollers, the core of the bale is formed.



When the desired size is reached, adjustable to a minimum of 0.51m up to a maximum of 1.65m, the automatic binding/wrapping system comes into action tying the bale with double twine or wrapping it with net and is controlled by the “F_bus” system.



The bale is ejected by hydraulic command from the tractor without disengaging the power take-off.
An ejector makes sure that the bale is moved out of the radius of the tailgate's closing movement.



The round baler has various possibilities for adjustment of the diameter and density of the core of the bale, which are determined on the basis of the type of forage and your process needs.
It is possible to start the bale with a harder or softer bale core by means of electronic selection.

7_INSTRUCTIONS FOR USE

7.1_BEFORE USE

Note: **All operations are to be carried out by a single operator who must have read and understood all the parts of this manual, especially the section on safety.**

Before starting work, make sure that the machine is in order, that the lubricants are at the right level and that all the parts subject to wear and deterioration are working perfectly.

WARNING! Adjustments and preparations for work must be done with:

- **The tractor switched off and the keys removed from the dashboard.**
- **The machine switched off and blocked.**
- **Switch off the "F_bus" system.**

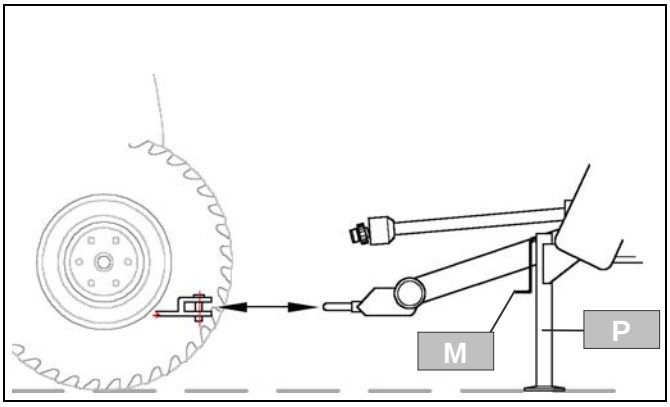
(unless there are specific instructions to the contrary in this operator manual).

7.2_HOOK UP TO THE TRACTOR FOR TOWING

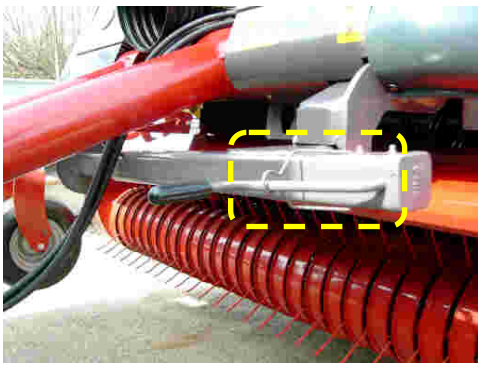
CAUTION! Hooking up to the tractor can be dangerous therefore take great care in this operation.

Use a tractor that is suitable for towing the machine in use *"3.8_Tractor requirements".*
Make sure that there are no objects resting on the machine and that there are no persons and/or animals in the immediate vicinity.
The steering bar of the round baler is provided with a pivoting towing eye.

- Hook up the round baler to the rear hook of the tractor making sure that the machine is in a stable horizontal position and that the towing eye is at the same height as the towing device of the tractor.
- Rotate the handle **"M"** of the parking jack to lower or raise the towing eye until it is correctly aligned with the tractor's towing device.
- Insert the pin in the towing eye and secure it with the safety pin; then raise the parking jack **"P"**, by turning again the handle **"M"**.



- Then remove any chocks from under the wheels.
- Insert the feeder plug of the lighting system for road transport of the round baler into the socket of the tractor and check that all the indicator, parking and stop lights are working correctly.
- Make sure that the tailgate and the protection guards are closed properly and secured.
- Retract the parking jack **"P"** into the towing position and secure it with the special spring.
- Make sure that the pick-up is in a high position.



7.3_HOOK UP TO THE TRACTOR FOR WORK

Before connecting any of the various components of the baler to the tractor, make sure that the tractor meets the requirements for the correct working of the round baler *"3.8_Tractor requirements".*
The steering bar of the round baler can be adapted to the tractors towing device which may be of the "standard" or "high" type.
In any case the towing eye must always be parallel with the ground.

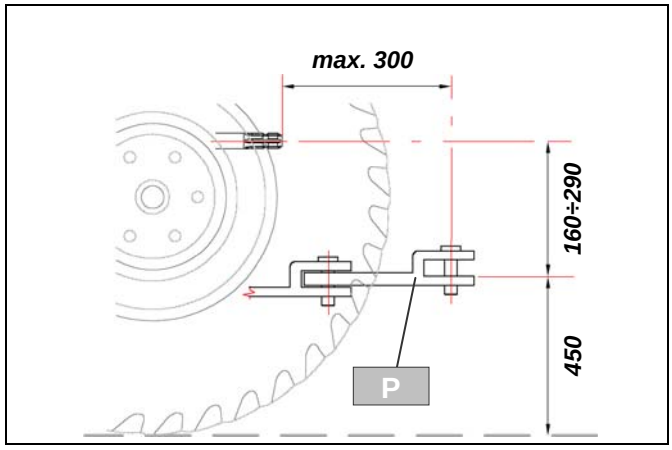
WARNING! Adaptation of the drawbar to the attachment of the tractor must always be done with:

- **The tractor switched off and the keys removed from the dashboard.**
- **Machine taken off the tractor.**
- **Servo drawbar placed on the soil.**
- **Machine locked on stable soil, in order to prevent any possible accidental shifts of the machine.**
- **Switch off the "F_bus" system**

Keep in mind all the basic safety rules contained in the chapter *"4_General safety regulations".*

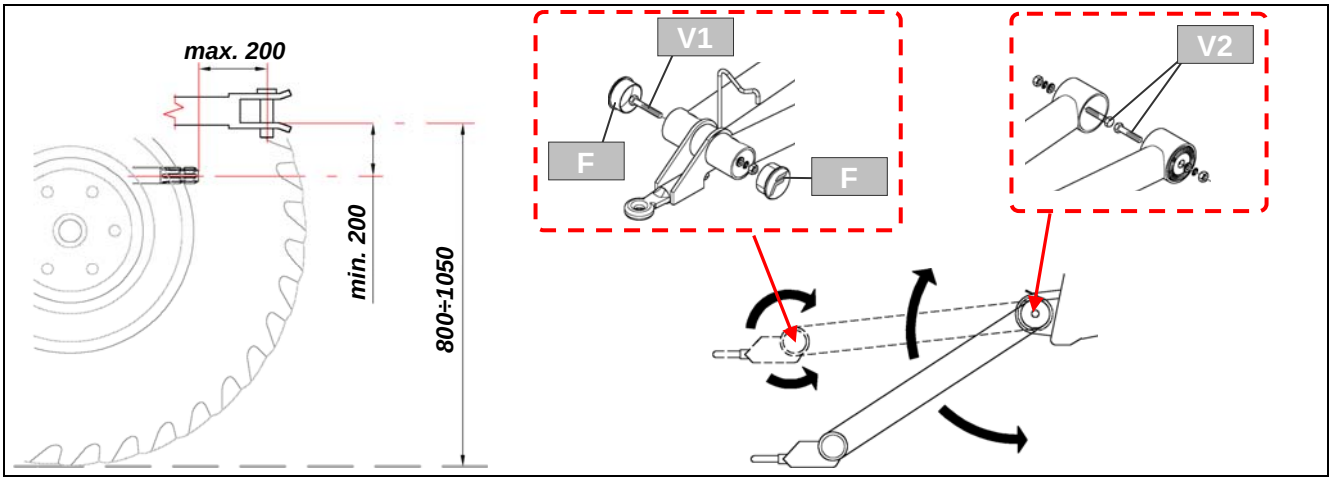
7.3.1_"STANDARD" HOOK UP

The machines leave **FERABOLI S.p.A.** with the hook up for the tractor in the **"standard"** configuration.
If necessary it is permissible to use an extension **"P"** for hooking up to your tractor within the limits shown in the figure.



7.3.2_HIGH HOOK UP

It is also possible to connect the round baler to tractors having a **"high"** towing device, within the limits allowed, as shown in the figure.
In order to do this it is necessary to adapt the steering bar of the round baler to the hook up of the tractor:



- Remove the two plugs **"F"** located at the end of the steering bar and unscrew the screws **"V1"** that fix the towing eye and the two screws **"V2"** that fix the wings of the steering bar to the cross-bar of the machine.
- Rotate the steering bar to the position for the 'high' hook up of the tractor and, at the same time, keep the towing eye parallel with the ground in the same way.
- **Once the right adjustment is obtained, check the correct coupling of the toothed fifth wheels before tightening the screws.**
- **Then tighten the screws "V1" and "V2" taking great care to keep to the torque value of 700Nm.**
- Re-close the end of the steering bar with the two plugs **"F"**.

IMPORTANT! It is permitted to use the high hook up with a measurement of 800÷1050mm

7.4_CONNECTION OF VARIOUS DEVICES OF THE ROUND BALER

After completing the hooking up of the round baler to the towing device of the tractor *"7.2_Hook up to the tractor for towing"*, retract the parking jack to the rest position.

Then continue with the connection of the various devices of the round baler:

- Connection of the "F_bus" system
- Connection of the lighting system
- Connection of the hydraulic system.
- Attachment of the cardan shaft.

7.4.1_CONNECTION OF THE "F_bus" CONTROL SYSTEM

When you connect the machine to the tractor for the first time you must first connect the power cable **"A"** to the battery **"b"** 12V= of the tractor.

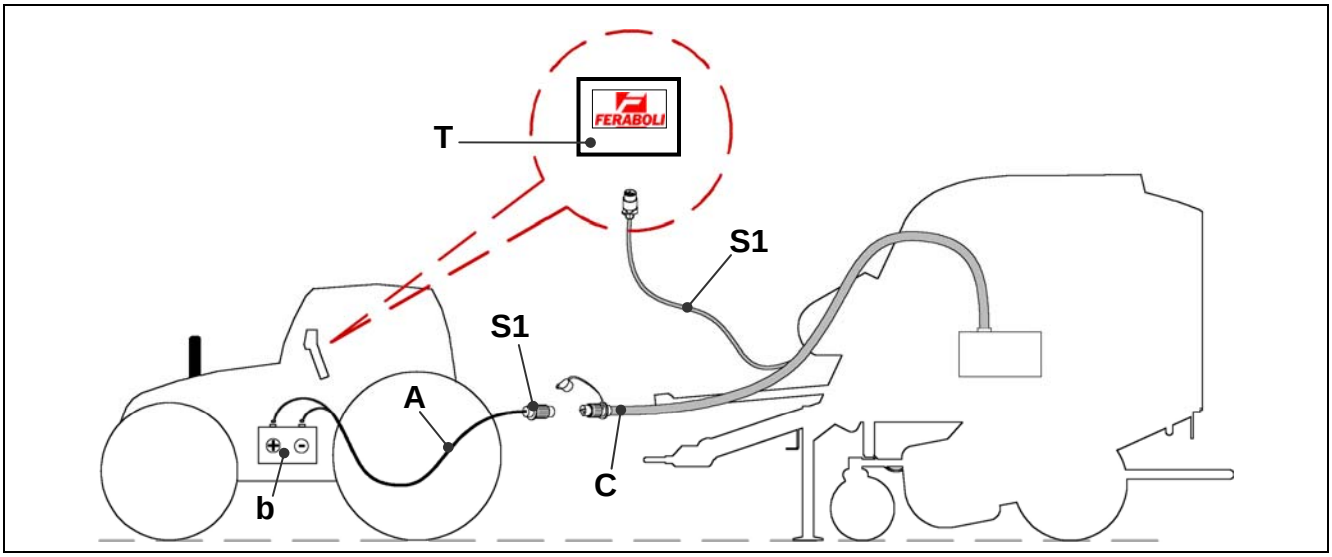
IMPORTANT! Be careful not to invert the polarity:

- **RED cable "+" pole (positive)**
- **BLACK cable "-" pole (negative)**
- **This must be done with the tractor off.**

The electrical circuit of the round baler requires a supply current with negative earth 12V=
The plug **"S1"** of the battery feed cable must be positioned behind the tractor.
Install the terminal in the tractor cabin so that it is clearly visible and within the reach of the operator

- Position the terminal **"T"** correctly in the tractor cabin.
- Connect the current cable **"C"**, outside the machine.
- Connect the signal cable **"CS"**, in the tractor cabin**"**.

Check that the terminal has come on by pressing the appropriate key; if the cables have been connected correctly, the system will come on.



7.4.2_CONNECTION OF THE LIGHTING SYSTEM

Connect the lighting system and check that all the indicator, parking and stop lights are working correctly.
Do not insert unsuitable fuses, do not modify the cables and do not replace plugs and sockets that are not in conformity with the originals.
For any maintenance and/or repair work contact our Assistance Centre

FERABOLI S.p.A. declines all liability resulting from failure to observe these warnings.

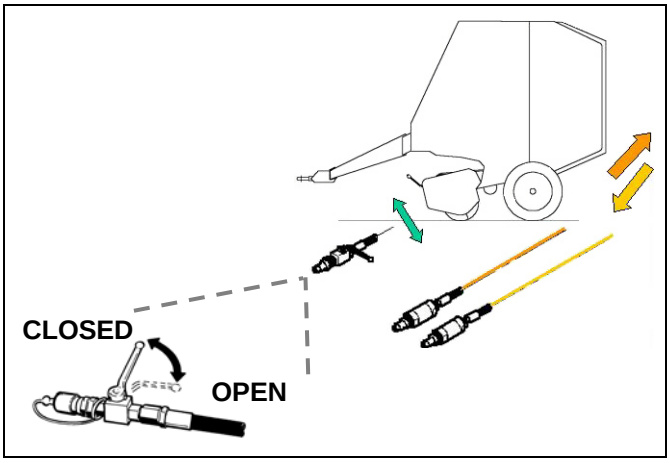
7.4.3_CONNECTION OF THE HYDRAULIC SYSTEM

Connect the hydraulic tubes:

- The small tube is connected to a single-acting distributor.
- The two large tubes are connected to a double-acting distributor.
- The small tube for hydraulic raising of the pick-up is provided with a stop valve.

Before lifting the pick-up:

- Position the stop valve lever in the **"OPEN"** position and then lift it (transport position).
- Finally turn the lever of the valve to the **"CLOSED"** position to block it.



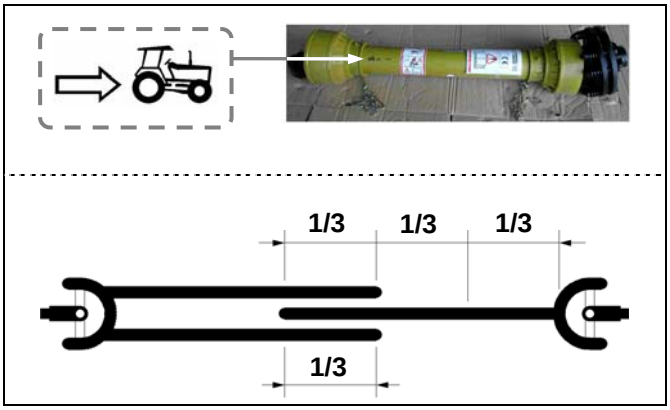
IMPORTANT! Do not reverse with the small pivoting wheels of the pick up resting on the ground.

7.4.4_ATTACHMENT OF THE CARDAN SHAFT

The cardan shaft is a transmission device (machine), having "CE" certification.
Each cardan shaft is provided with a user manual; follow and respect all the information and safety rules for using the cardan shaft contained in this manual scrupulously.

Mount the cardan shaft, provided with the machine, between the power take-off of the tractor and the transmission box of the machine; the connection of the cardan shaft on the tractor side is indicated on the cardan shaft itself.

Make sure that the length never exceeds the minimum distance between the machine and the tractor (cambering hazard), while at the greatest distance the two tubes must insert one into the other by at least 1/3 of their length.



- Check that the safety buttons or screws are inserted well into the grooves of the power take-off and check that the guard rotates freely; if this is not the case apply grease.
- Fix the chain to prevent self-rotation of itself and the guard.
- For further information on the use and maintenance of the cardan shaft read the special instruction booklet provided with it.

WARNING! After all maintenance work on the cardan shaft replace the protective covers on the cardan shaft.

7.5_OPERATING TESTS

CAUTION! The round baler is always attached to the tractor before any operation, whether empty or containing a bale.

After making the various connections described above:

- Check that the belts are not stuck to the paint of the rollers.
- Start up the tractor without engaging the PTO and check that the various functional movements of the round baler are working correctly.
- Check that the hydraulic system is working; that the tailgate opens and closes; raise and lower the pick-up (remember to move the lever of the stop valve to the **"OPEN"** position in order to be able to raise the pick-up).
- Check that the electrical connection to the terminal is working: switch the “F_bus” system on using the appropriate key.
- Check that the electrical system, indicator, parking and stop lights are working.
- Close the tailgate and operate the PTO.

CAUTION! Before operating the PTO, make sure that there are no persons in the vicinity; operate carefully the first time making sure that all the mechanical parts and transmission are working correctly.

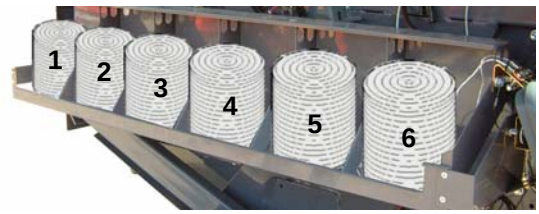
7.6_SETTING THE MACHINE UP FOR WORK

Before starting work make all the necessary adjustments to prepare the machine for your specific work requirements.

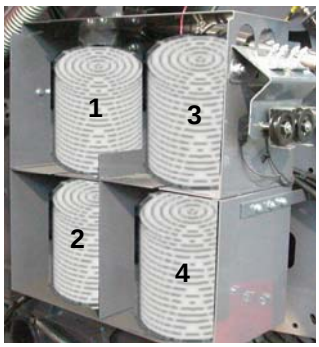
7.6.1_TWINE LOADING

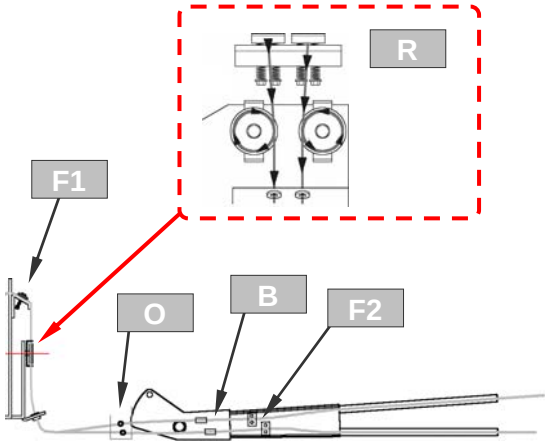
For the twine binder to work well we advise using propylene twine with a yarn count from 500 to 750 or 1000 (m/kg).
The twine binder of your round baler can also work with other types of twine.

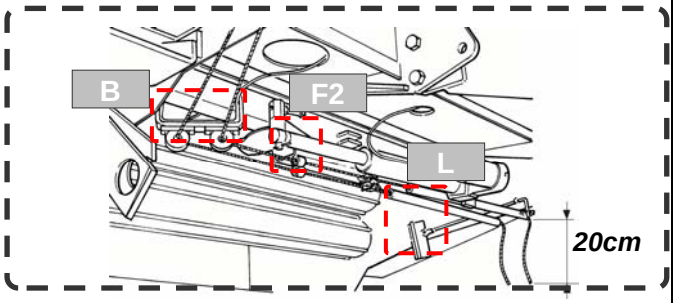
- Open the right side guard and place the spools of twine in the special box.
- Connect the six coils to one another in two groups of three (1+2+3 and 4+5+6), by passing the wire through the slots of the separators (in the BASIC model connect the four coils to one another in two groups of two (1+2 and 3+4).
- Pass the ends of the two twines through the twine braking device **"F1"** and pass them completely around the two rollers **"R"** (as shown in the figure), which turning during binding, will signal that the twine is being wound around the bale.
- Then thread the twine through the eyes **"O"**, and then through the two bushings **"B"** and the two twine braking devices **"F2"** located on the arm of the binder; then pass it through the two tubes so that it protrudes from the other end by about 20cm, as shown in the figure (use one twine per path).



BASIC model





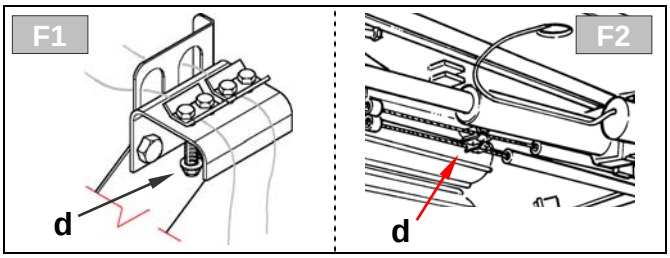


CAUTION!

- **The loading and threading of the twine for binding must be done with the motor and electronic control unit off.**
- **Beware of the blade "L" of the binder when doing work in its proximity.**

Adjust the tension of the twine on the bale by loosening or tightening the nuts **"d"** of the twine braking device **"F1"** and **"F2"**:

- Tightening the spring makes the twine tighter.
- Loosening the spring makes the twine looser.



Your round baler may also be provided with a supplementary twine box which is only for keeping spare twine so that you do not run out during work in the field.

7.6.2_NET LOADING

- The round baler can use spools from 2000 to 3000 metres.
- The hole inside the cardboard tube of the roll of net must be 75÷78mm..
- For good performance of the binder we advise using a net of 14÷16 (g/m).

WARNING! Switch on the "F_bus" system and, depending on the type of terminal you are using, follow the instructions for loading the net shown in paragraph:

- ***QuickTronic = "10-QT.3.3_Net loading".***
- ***EasyTronic = "10-ET.6.2_Net loading".***

IMPORTANT!

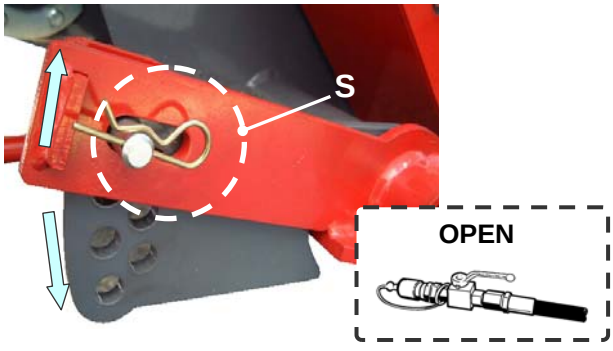
- **Take great care to push the net roll onto the tube correctly so that it rotates in the right direction as shown on the decal**
- **After positioning the net and before commencing work, bring the net wrapper to its original position.**
- **Make sure that the cutter has finished its movement (net wrapper in the original position at the end of its stroke)**

CAUTION! Beware of the blade of the net wrapper when doing any work in its vicinity

7.6.3_ADJUSTMENT OF THE PICK-UP WHEELS

It is possible to adjust the working height of the pick-up:
Raise or lower the height of the pick-up change the position of the pin **"S"**, located on the support wheel arm, by inserting it into one of the holes located on the side of the pick-up to give the working height required.

To raise or lower the pick-up:
Use the lever of the tractor switch remembering to open the stop valve located near the quick release fitting (position **"OPEN"**).



IMPORTANT!

- **The tines of the pick-up must never touch the ground; therefore adjust the working height of the pick-up so that the tines remain at least 2-3cm above the ground.**
- **Insert the pin "S" in the same position on both left and right sides of the pick-up.**
- **Before reversing, the pivoting wheels must be raised from the ground by raising the pick-up in order not to damage them.**

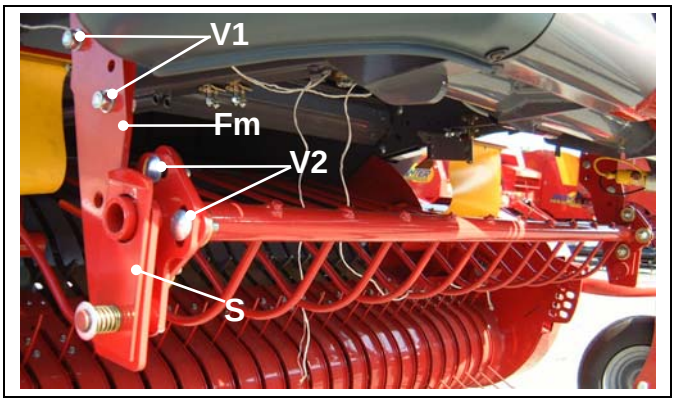
7.6.4_RAKE (mod.LT)

Depending on the type of swathe to be collected the rake can be moved to a number of positions:

- **Low:** for swathes of low volume
- **Medium:** for voluminous swathes
- **High:** for very voluminous swathes

With the machine still and the tractor motor off:

- Remove the rake loosening the spring retainers **"Fm"**.
- Loosen the screws **"V1"** of the support brackets.
- Fix the support brackets **"S"** in the desired position required for work and screw back the screws.



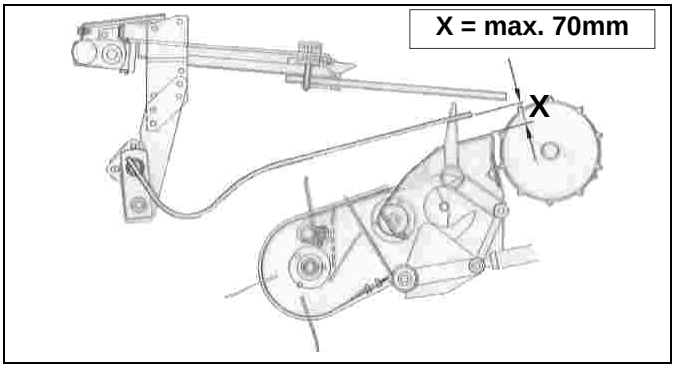
IMPORTANT! Position the support brackets "S" in the same position on both left and right sides of the rake.

- Then remount the rake.

It is also possible to adjust the inclination of the tines by turning the six screws **"V2"** (3 on each side):

- Loosen and rotate the crosspiece of the rake to the desired position; screw back the six screws **"V2"**.

IMPORTANT! Check the height of the inclination "X" of the rake, which must not exceed 70mm (measurement made from the feeder grid).



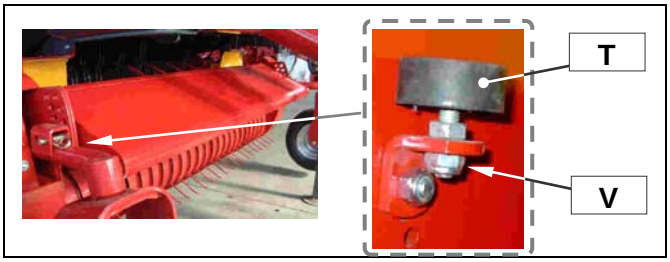
7.6.5_FEEDER PLATE (mod.LTR and LTC)

In the machines with a rotor, a feeder plate optimises the collection and channelling of the product into the baler.

The distance of the plate from the tines of the pick-up can be adjusted by moving the blocks **"T"**.

With the machine still and the tractor motor off:

- Remove the plate.
- Loosen the screw **"V"** that secures the block **"T"**, and position it in one of the holes located on the side of the pick-up to suit the work to be done; then screw back the screws **"V"**.



IMPORTANT! Position the block "T" in the same position on both the left and right sides of the pick-up.

- Remount the plate.

For short products and/or swathes of low volume the plate should be close to the pick-up while for tall products and/or voluminous swathes the plate should be further from the tines of the pick-up.

7.6.6_CUTTER SYSTEM (mod.LTC)

If your machine is provided with a cutter system, you will have the option of cutting the product while picking up the swathes.
Using the control terminal, the knives must be engaged in the chamber in order to be able to cut.

<u>WARNING</u>! Switch on the "F_bus" system and, depending on the type of terminal you are using, follow the instructions for engaging or disengaging the knives as shown in paragraph:

- ***QuickTronic = "10-QT.3.4_Cutter device".***
- ***EasyTronic = "10-ET.6.3_Cutter device".***

<u>The cutting length is</u> 77mm
If you wish to cut a longer product it is necessary to remove some of the knives.

Further information regarding the adjustment, replacement and maintenance of the knives can be found in the paragraph *"9.9_Maintenance and adjustment of the cutter"*.

7.6.7_CHOICE OF THE TYPE OF BALE CORE

<u>The choice of the core type varies depending on the machine model your have purchased</u>:

<u>Roundbaler model LT-LTR-LTC</u>:
The "F_bus" system enables you to set the diameter and density of the bale core depending on the forage type and your working requirements.

- If on the terminal appears **"OFF"** (off), the machine will work with **"hard core"**.
- If you set a diameter core value, the machine will work with **"soft core"**.

<u>Roundbaler model BASIC</u>:
The "F_bus" system allows you to set the max. diameter of the soft core that will be pressed only by the tension springs.

- If on the terminal appears **"OFF"** (off), the machine will work with **"hard core"**.
- The set value is the initial diameter of the pressure.

7.6.8_OPERATING PRESSURE SELECTION

The choice of the working pressure depends on the desired density and on the type of product to be packaged.
It is possible to modify the working pressure by choosing between the electronic model (baler model LT-LTR-LTC) and the mechanical model (BASIC baler model).

Electronic adjustment of the working pressure (roundbaler model LT-LTR-LTC):

Using the terminal select the value of the pressure with which to work.
For further information regarding the electronic adjustment of the pressure, consult the paragraph:

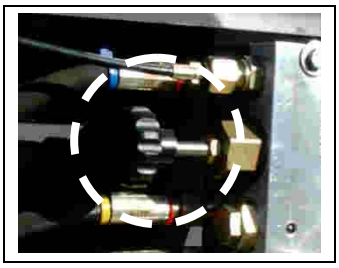
- *QuickTronic = "10-QT.3.1_Programming".*
- *EasyTronic = "10-ET.5.1_Program menu".*

Mechanical adjustment of the working pressure (roundbaler model BASIC):

A valve is situated on the round baler which allows adjusting the bale pressure:

- Open the door located on the front left part of the machine to access the valve.

  To change the working pressure, turn knob ***"M"***, first loosening the nut:

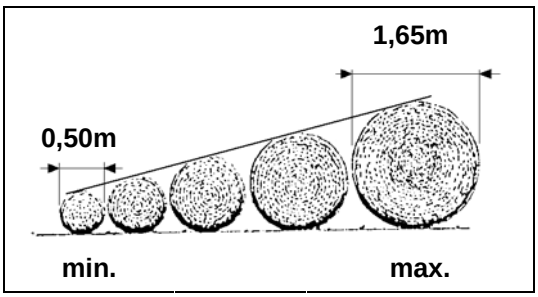


- Turn the knob ***"M"*** clockwise to increase the pressure (heavy bale).
  Maximum pressure, of approximately 210 bar, is obtained by fully tightening the knob.
  Turn the knob ***"M"*** anti-clockwise to decrease the pressure (lighter bale).
  The minimum working pressure is approx. 60bar.
- Lock knob "M" in place, tightening the nut again.
- Close the door.

7.6.9_BALE DIAMETER SELECTION

Using the terminal of the "F_bus" control system you can select the diameter with which you intend to work.

You can obtain bales with diameters that vary from a minimum of **0.50m** to a maximum of **1,65m**.



7.6.10_WORK PROGRAM SELECTION

Using the terminal of the "F_bus" control system, depending on the configuration of your machine, you can personalise the program that manages the work cycle.
For example:

- Bale diameter
- Type and quantity of twine or net
- Automatic or manual binding or wrapping cycle
- Electronic pressure values.

7.7_FIELD PREPARATION

To ensure the maximum efficiency during collection and baling of the various products we advise operating as described below:

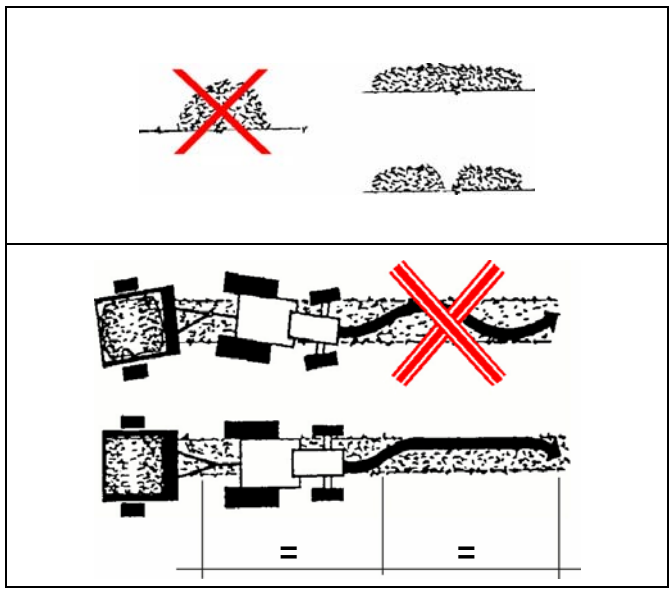
7.7.1_CONDITIONING

It is important for the forage to be conditioned to ensure uniform humidity content in stems and leaves.
Long stem crops, which are difficult to work with, elastic and tough, must be conditioned in order to break the stems and reduce their resistance to rolling when the bale is being formed and also because of their undesirable tendency to get caught between the belts.
To bale maize stalks it is advisable to defibrate for better bale formation and density; do not defibrate too fine!

7.7.2_SWATHES

The preparation of the swathes is very important for obtaining a good formation of the bales.
When the forage has been cut and dried the swathes must be formed.

The swathes can be single or double and of width equal to the width of the pick-up on your machine in order to make the best use of the round baler's capacity.
When double swathes are made it is important that they be left beside each other and not piled into one heap.



Single swathes can be 0.50÷0.60m wide, but in this case a "*zigzag"* guide must be followed in order to feed the press in a way that takes advantage of the entire collecting width of the baler and forms a bale of the right size.

Using the terminal, the "F_bus" system enables you to follow the instructions to zig-zag correctly".

For further information consult the paragraph:

- *QuickTronic = "10-QT.4_Work phase".*
- *EasyTronic = "10-ET.4_Work phase".*

8_OPERATION IN THE FIELD

8.1_SWITCHING ON

After you have set up the machine as described in the chapter *"7_Instructions for use"*, switch on the "F_bus" control system in order to start work.

Before starting work you can use the terminal to review and/or change the program values with which your machine has been set up:

If the round baler is provided with a cutter system (mod.LTC), you can activate or deactivate the product cutting knives:

- then check the position of the knives to see if they are engaged (knives in the chamber) or disengaged.

Before starting work check that the arms of the twine binder or net wrapper are in the rest position and that the respective cutting devices are unloaded.

Take a position on the swathe; open the pick-up stop valve (**"OPEN"** position) and lower it.

Check that the tailgate is closed correctly:

- the manometer should indicate about 30bar,

You can now engage the PTO and begin collection.

The rotation speed of the PTO must be between 450÷540 rpm, and must not exceed this range of values.

For further information on how to change the programming of the "F_bus" control system and how to engage and disengage the knives, see chapters:

- *"10-QT_QuickTronic".*
- *"10-ET_EasyTronic".*

8.2_FEED SPEED

The feed speed depends on the type of product to be baled and the ground contours.

8.3_LOADING (optional kit)

If your round baler is provided with the loading indicator kit, and the function has been activated, you can monitor the product loading inside the chamber.
For further information on how to load with the loading indicator kit, see paragraph:

- *QuickTronic = "10-QT.4_Work phase".*
- *EasyTronic = "10-ET.4_Work phase".*

8.4_FORMATION OF THE BALE

Using the terminal of the "F_bus" system, you can follow all the various phases in the formation of the bale.
For example:

- Bale diameter.
- Type of binding (or wrapping) active (TWINE or NET).
- Binding method (AUTOMATICALLY MODE or OPERATOR MODE).

If your machine is provided with a cutter system (mod.LTC):

- state of the knives (ON or OFF).

When you have reached the bale diameter value set and depending on the terminal type in use, the "F_bus" system will warn you that you must stop the tractor immediately in order to allow the bale binder to bind the bale.
For further information on the various phases of bale formation, see chapter *"10_ F_bus control system".*

8.5_BINDING

The “F_bus” control system can start and carry out the binding process at the end of each bale formation AUTOMATICALLY MODE or in OPERATOR MODE.
For further information on the various binding phases, see paragraph:

- *QuickTronic = “10-QT.4_Work phase”.*
- *EasyTronic = “10-ET.4_Work phase”.*

8.6_BALE EJECTION

After binding, depending on the terminal type in use, the “F_bus” system will tell you on the terminal to open the tailgate in order to eject the bale on the ground.

WARNING! Before opening the tailgate:

- **Make sure that you are on flat ground or in a suitable position if the ground is sloping.**
- **Keep any persons away from the machine and especially from behind the tailgate.**

Operate the lever of the hydraulic switch located on the tractor to open the tailgate.
Wait for the bale to be ejected then re-close the tailgate.

At this point the “F_bus” system, depending on the terminal type in use, will tell you that your machine is ready to start a new work cycle.

If the tailgate should not re-close normally, the “F_bus” system, depending on the terminal type in use, will warn you of the problem.

IMPORTANT! Never begin collection with the tailgate open or even just one hook open.

If your round baler is provided with an electronically controlled bale ejector device and this function has been activated, the “F_bus” system will allow you to monitor directly on the display all the steps of:

- ejecting the bale,
- possible blockage of the bale.

Note: **the “F_bus” control system may work with different types of terminal.**
All the information regarding the various operations described above will therefore be different and displayed depending on the terminal type in use.
All the more detailed information regarding the specific use of each terminal is given in chapter *“10_“F_bus” control system.*

8.7_UNBLOCKAGE OF THE PRODUCT

WARNING! If the round baler should block up with product while working, do not try to remove the product from the machine while it is in operation.

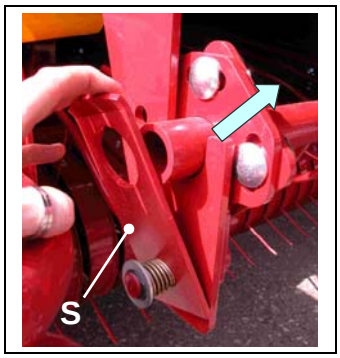
8.7.1_CLEARING THE PICK-UP (mod.LT)

The product is blocked between the rake and the tines of the pick-up.

WARNING! Before attempting to clear away the product

- **Switch off the tractor, remove the keys from the dashboard and wait for all the moving parts to stop completely.**
- **Switch off the "F_bus" system.**

- Shift and rotate the bracket **"S"** (on both the left and right sides) so as to free the rake and then remove it.
- Put on the cut resistant gloves and with the help of suitable equipment clear the area where the product has blocked up.



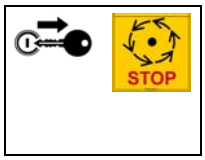
CAUTION! Take care when releasing the brackets "S", the product between the pick-up and the rake could cause the rake to spring up.

- When you have completely cleared the area of the blockage remount the rake and secure it again with the brackets **"S"**.
- After completing the operations described above re-engage the PTO.

If the pick-up fails to turn the transmission safety bolt of the pick-up could have sheared.
To replace it consult the paragraph *"9.2.1_Replacement of the pick-up safety device".*

8.7.2_CLEARING THE PICK-UP CUT (mod.LTR and LTC))

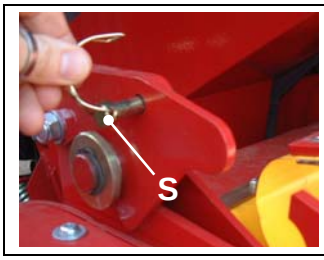
The product is jammed between the collection channel plate and the tines of the pick-up.

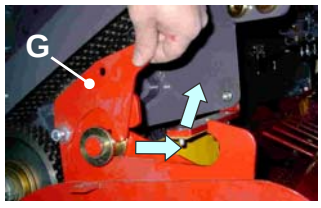


WARNING! Before attempting to clear away the product:

- **Stop and switch off the tractor, remove the keys from the dashboard and wait for all the moving parts to stop completely.**
- **Switch off the "F_bus" system.**

- Release and remove the safety pin **"S"** (on both left and right sides), and raise the securing hook **"G"**.
- Remove the collection channel plate.
- Put on protective gloves and clear the area of the blocked product using appropriate equipment.





- When you have cleared the blockage completely, replace the collection channel plate and secure it again with the hook **"G"** and the pin **"S"**.
- After completing the operations described above re-engage the PTO.

If the pick-up fails to turn, the bolt of the transmission safety system could have sheared. To replace it consult the paragraph *"9.2.1_Replacement of the pick-up safety device".*

8.7.3_CLEARING THE ROTOR (mod.LTR and LTC)

An excessive volume of the product is blocked between the rotor and the collection channel.

Manual clearing of the cutter assembly:

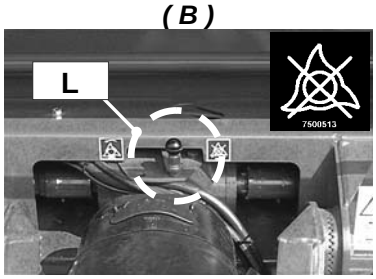
WARNING! Before attempting to clear away the product:

- **Stop and switch off the tractor, remove the keys from the dashboard and wait for all the moving parts to stop completely.**
- **Switch off the "F_bus" system.**

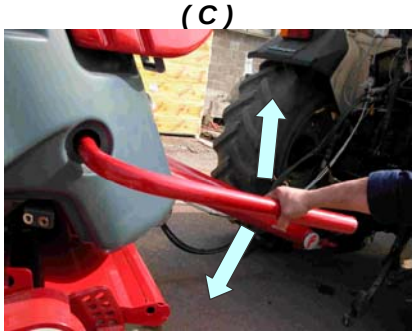
A) Raise the right guard and pull out the crank handle for unblocking from its seat.
B) Move the rotor engagement lever **"L"** to the neutral position and insert the crank handle on the shaft of the distribution box.
C) Using the handle rotate the rotor anticlockwise for about 1/2÷3/4 of a turn to free it from the product accumulated.

(A)

(B)



(C)

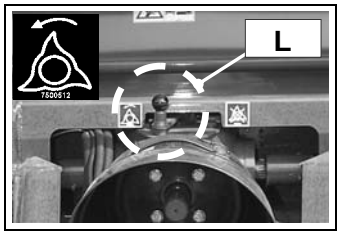


If it should be necessary to remove a foreign body manually (stone, stick, etc.) before doing this remember to put on the cut resistant gloves and use appropriate equipment.

CAUTION! If your machine is equipped with a cutting system (mod.LTC), take great care in performing these operations as the area of the rotor is very dangerous due to the presence of cutting knives.

If necessary to remove the collection channel plate, consult the paragraph *"8.7.2_Clearing the pick-up"*.

- When you have cleared the area concerned completely remove the crank handle and put it back in its housing; close the guard.
- Move the engage lever **"L"** back to the run position.
- Replace the collection channel plate if it was removed previously.
- After completing the operations described above re-engage the PTO.



If the rotor should fail to rotate:

- Ensure that you have moved the engage lever **"L"** correctly.
- The bolt of the mechanical transmission safety system could have sheared.

To replace it consult the paragraph *"9.2.2_Replacing the rotor's mechanical safety device".*

Automatic clearing "AFC" of the rotor:

If your round baler is provided with **"AFC"** safety devices, reduce the number of rpm of the tractor to a minimum and wait for the product to be cleared.
This device is engaged and disengaged automatically until the blockage has been cleared.
If the tractor engine should stall, start it up again and keep it at a minimum.

If your machine is equipped with a cutting system (mod.LTC):

- If you are working with the knives inserted, it is a good idea to stop the machine and disengage the knives before clearing the product *"7.6.6_Cutter system"*, then proceed as described.
- Engage the knives again on completion of this operation.

WARNING! During this entire operation do not approach or allow anyone else to approach the machine. The "AFC" device could clear the blockage at any moment and the rotor could resume its normal rotation.

8.8_STOPPING THE MACHINE

<u>IMPORTANT</u>! On finishing work the operator must:

- **Stop the machine.**
- **Make sure that all the moving parts of the machine have stopped and are in the rest position.**
- **Stop the tractor motor and remove the keys from the dashboard.**
- **Switch off the "F_bus" system.**

8.9_PARKING

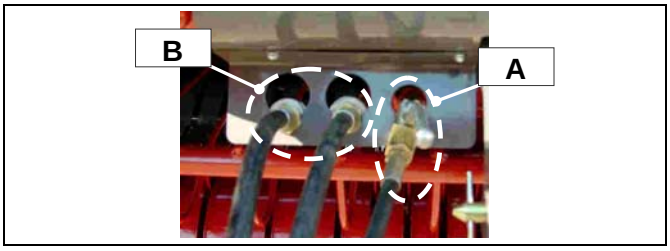
<u>CAUTION</u>! Before taking the machine back to its storage area make sure that there is no bale still loaded.

At the end of work deposit the machine in a suitable flat area to avoid sudden accidental movements.

- Place the parking chocks under the wheels.
- Lower the parking jack to the ground and block it with the safety pin. Raise the machine by 2÷3cm from its connection to the tractor in order to unhook it.
- Raise the cardan shaft support, then disconnect the cardan shaft from the tractor and rest it on the support.
- Secure it with the chain.

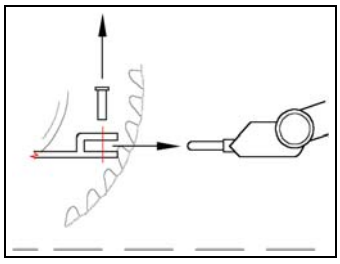
<u>De-pressurise hydraulic circuit and</u>:

- Rest the small wheels of the pick-up on the ground; move the lever of the stop valve to the **"CLOSED"** position; then disconnect the tube and place it in its special housing **"A"**.
- Disconnect all the other tubes of the hydraulic system and place them in their special housing **"B"**.



- Disconnect the electrical feed lines, from the lighting system and wrap them around the support.
- Disconnect the signal cable of the "F_bus" system and wrap it around the tube support.
  Then remove the control terminal and put it in a place protected from dust and adverse weather conditions.

- Remove the safety pin and the locking pin from the towing eye of the steering bar and then unhook the tractor from the machine.
- Remove the tractor from the vicinity of the baler.



9_MAINTENANCE AND ADJUSTMENT

9.1_ROUTINE MAINTENANCE

<u>IMPORTANT</u>! Regular careful maintenance lengthens the life of your machine and guarantees your personal safety.

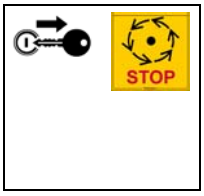
All the screwed/bolted assemblies must be tightened according to the values contained in the table *"11.4_Torque wrench settings"*, unless stated otherwise.
<u>FOR THIS MACHINE THE VALUE "8.8" REPRESENTS THE STANDARD AND THE MINIMUM QUALITY USED</u>.
Diameter and torque wrench settings for the quality of the materials according to DIN ISO 898.

The lubrication of any machine with rotating and rubbing parts is of great importance for the duration and working order of the machine. Lubrication should therefore be done regularly and systematically *"11.4_Torque wrench settings"*, unless stated otherwise.

<u>WARNING</u>! Before doing any maintenance on the machine:

- **Keep in mind all the basic safety rules contained in the chapter *"4_General safety regulations"*.**

Do maintenance work only with the machine off and all the moving parts completely still:



- **Always turn off the tractor and remove the keys from the dashboard.**
- **Always switch off the "F_bus" system.**
- **Never raise the machine from the ground.**

Prearrange maintenance work for which the due dates are known.
This manual is of a purely informative nature. The periods between maintenance operations are for normal working conditions of the round baler therefore if the round baler is used in more sever conditions it is logical to increase the frequency of maintenance.

Replace any damaged parts:
<u>ALWAYS USE ORIGINAL SPARE PARTS</u>.

<u>WARNING</u>!: If it is necessary to do maintenance with the tailgate open, or inside the bale formation chamber itself, lock the tailgate in position using the tailgate safety lock following the instructions shown in paragraph *"4.5.12_Tailgate safety lock device".*

Do the maintenance work exactly as indicated in this manual and have any worn or damaged parts replaced by specialised personnel.

9.2_MAINTENANCE AND ADJUSTMENT OF SAFETY DEVICES

Some of the safety devices listed in chapter *"4.5_Safety devices"* of this manual need to be reset and/or adjusted after they have come into action.

9.2.1_REPLACEMENT OF THE PICK-UP SAFETY DEVICE

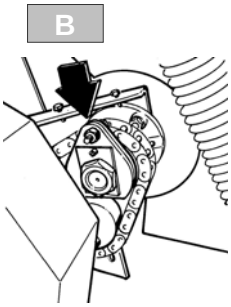
If the safety device bolt located in the safety device of the pick-up should break, replace it with one of identical quality:

- **Bolt *"B"* TE M8X 45-10.9 UNI 5738 - DIN 960** (not galvanised; partially threaded).

- Loosen the screws **"V"** and pull out the safety guard located on the left side of the pick-up.
- Remove the bolt and make sure that there are no pieces of the sheared bolt caught between parts of the transmission.
- Realign the safety device holes, manually rotating the screw feeder; reinsert the new bolt and tighten it.

mod.LT

mod.LTR and LTC



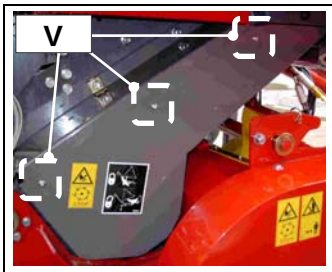
- Remount the safety guard and replace the screws **"V"**.

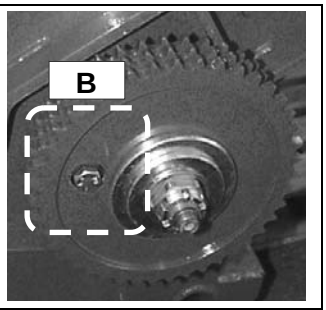
9.2.2_REPLACING THE ROTOR'S MECHANICAL SAFETY DEVICE (mod.LTR and LTC)

If the bolt located on the mechanical safety device of the rotor should break replace it with one of identical quality:

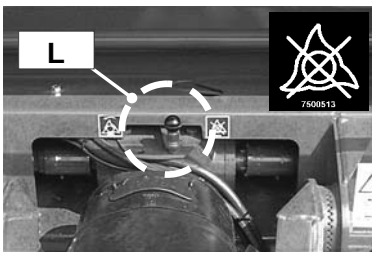
- **Bolt *"B"* TE M14X 60-8.8 UNI 5738 - DIN 960** (not galvanised; partially threaded).

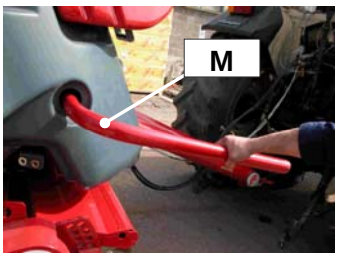
- Loosen the screws **"V"** and remove the safety guard located on the left side of the rotor transmission.
- Remove the bolt and make sure that there are no pieces of the sheared bolt caught between parts of the transmission.

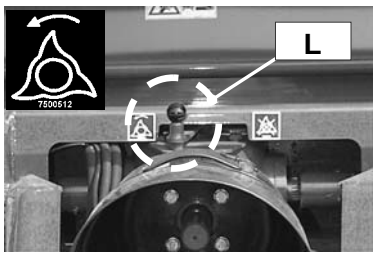




- Shift the rotor to neutral (lever **"L"** to engage the rotor into the neutral position).
- Using the crank handle **"M"** (provided) realign the safety device holes; insert the new bolt and tighten it.







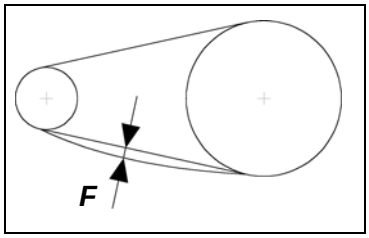
- Re-engage the rotor (lever **"L"** to engage the rotor into the engaged position), remove the handle **"M"** and replace it in its housing.
- Remount the guard and replace the screws **"V"**.

<u>WARNING!</u> Before engaging the PTO make sure that you have removed the handle "M" and repositioned it in its housing.

9.3_CHAIN TENSION ADJUSTMENT

Regularly check the tension of the transmission chains and the working of the automatic stretchers where provided.

- **The value "F" of chain stretching must be 5÷10mm.**

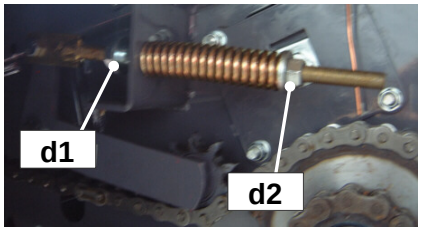


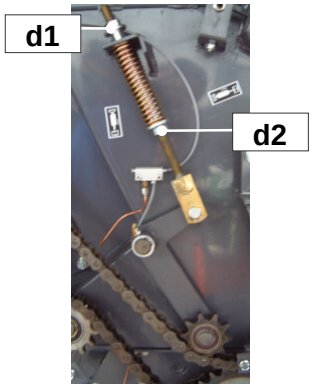
9.3.1_ADJUSTMENT OF THE AUTOMATIC STRETCHERS

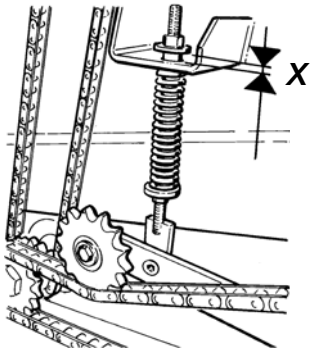
The roller chains of the machine are stretched automatically by spring stretchers; regularly check the correct tension of the chains and readjust the tension whenever necessary.
Check the working of the automatic stretchers.

To check and adjust the tension of the chains raise the left lateral guard:

- Loosen the nut **"d1"** and, turning the nut **"d2"**, adjust the distance **"X"**, which should be 10÷15mm.
- Once this setting has been made tighten again the nut **"d1"**.







- Lower and close the lateral protection guard again.

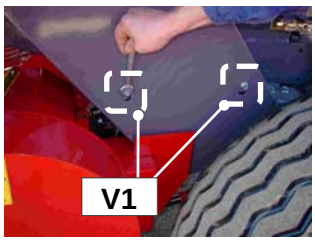
9.3.2_ADJUSTMENT OF THE MANUAL STRETCHERS

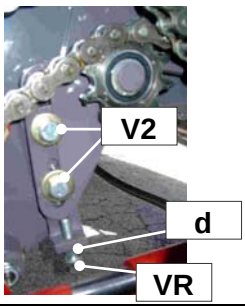
Some of the roller chains of the machine are stretched by stretchers whose adjustment must be done manually. Regularly check the correct tension in the chains and adjust it whenever necessary.
Check the manual adjustment of the stretchers.

To check and adjust the tensioning of the chains, open the left side cover (close the cover once the adjustment(s) made is complete).

<u>Large roller chain tension adjustment (mod.LT)</u>:

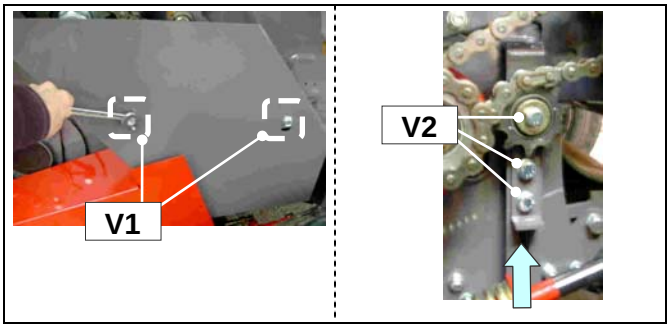
- Loosen the screws **"V1"** and remove the guard.
- Loosen the screws **"V2"** and the lock nut **"d"**.
- Screw in or out the adjusting screw **"VR"** so as to obtain the correct tension in the chain.
- Once the correct tension is obtained, tighten the lock nut **"d"** again and then the screws **"V2"**.
- Replace the guard and screw it in place with the screws **"V1"**.





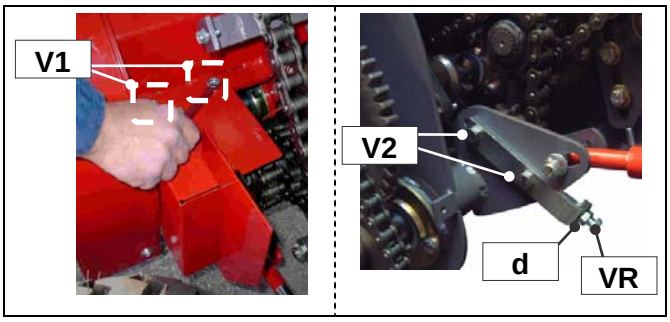
Large roller chain tension adjustment (mod.LTR and LTC):

- Loosen the screws **"V1"** and remove the guard.
- Loosen the 3 screws **"V2"** and using a hammer, adjust the tension of the chain by shifting the stretcher upwards with light hammer strokes.
- Once the correct tension is obtained screw back the 3 screws **"V2"**.
- Replace the guard and screw it in place with the screws **"V"**.



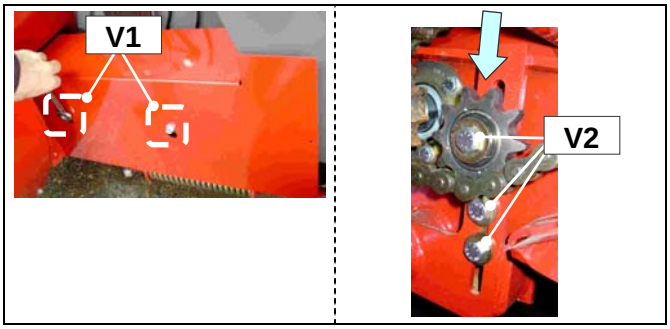
Collection assembly transmission chain tension adjustment (mod.LT):

- Loosen the screws **"V1"** and remove the protection guard.
- Loosen the screws **"V2"** and the lock nut **"d"**.
- Screw or unscrew the adjustment screws **"VR"** in order to obtain the correct tension of the chain.
- Once the adjustment has been made, tighten the lock nut **"d"** again and then the screws **"V2"**.
- Replace the protection guard and secure in place by tightening the screws **"V1"**.



Collection assembly transmission chain tension adjustment (mod.LTR and LTC):

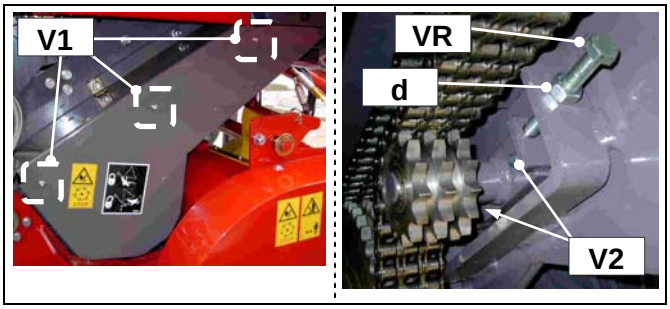
- Loosen the screws **"V1"** and remove the guard.
- Loosen the 3 screws **"V2"** and using a hammer, adjust the tension of the chain by shifting the stretcher downwards with light hammer strokes.
- Once the correct tension is obtained screw back the 3 screws **"V2"**.
- Replace the guard and screw it in place with the screws **"V1"**.



Rotor chain tension adjustment (mod.LTR and LTC):

To check and adjust the tension of the rotor chain raise the right lateral gull-wing protection guard:

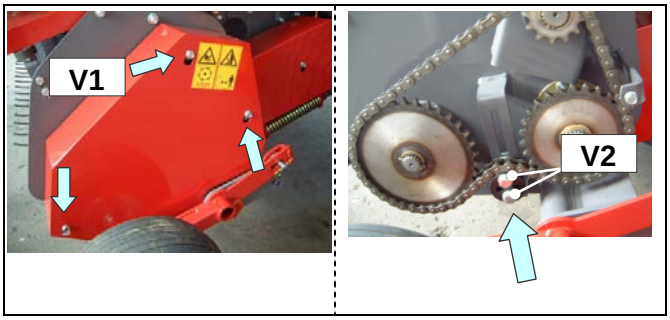
- Loosen the screws **"V1"** and remove the guard.
- From inside the side of the machine, loosen the 2 screws **"V2"**.
- Loosen the lock nut **"d"** and, screw in or out the adjusting screw **"VR"** so as to obtain the correct tension in the chain.



- Once the correct tension is obtained screw back the lock nut **"d"** and from the inside of the side of the machine screw back the 2 screws **"V2"**.
- Replace the guard and screw it in place with the screws **"V1"**.
- Lower and close the right lateral gull-wing protection guard **"V1"**.

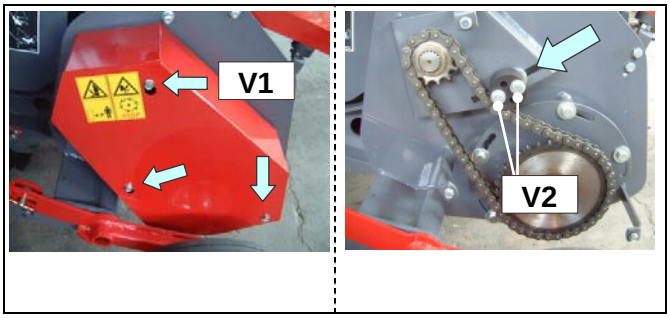
Pick-up chain tension adjustment (left side):

- Unscrew and remove the screws **"V1"** and the lateral guard of the pick-up.
- Loosen the 2 screws **"V2"** and using a hammer, adjust the tension of the chain by shifting the stretcher upwards with light hammer strokes.
- Once the correct tension is obtained screw back the 2 screws **"V2"**.
- Replace the guard and screw it in place with the screws **"V1"**.

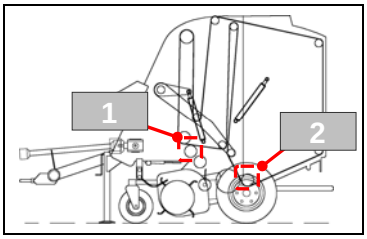


Pick-up chain tension adjustment (right sides):

- Unscrew and remove the screws **"V1"** and the left lateral guard of the pick-up.
- Loosen the 2 screws **"V2"** and using a hammer, adjust the tension of the chain by shifting the stretcher with light hammer strokes
- Once the correct tension is obtained screw back the 2 screws **"V2"**.
- Replace the guard and screw it in place with the screws **"V1"**.



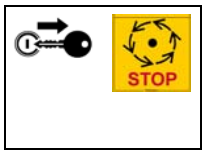
9.4_ADJUSTMENT OF THE SCRAPERS



<u>IMPORTANT</u>! Both areas of the scrapers present on the round baler must always be kept adjusted correctly and clean.

<u>The scrapers on the round baler are</u>:

1) engine roller scraper,
2) lower roller scraper.



<u>WARNING</u>! Before doing any kind of maintenance work and/or adjustments to the scrapers:

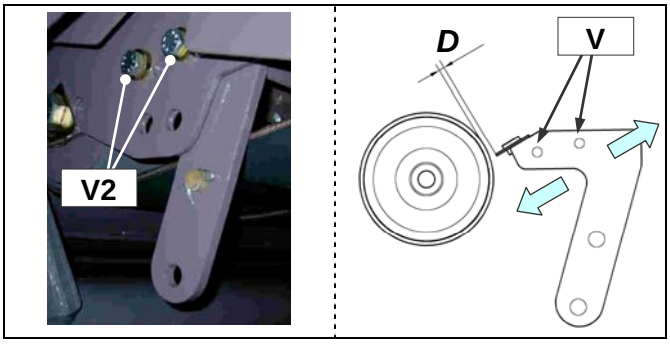
- **Stop the machine and wait for all the moving parts to stop.**
- **Turn off the tractor engine and remove the keys from the dashboard.**

<u>IMPORTANT</u>! When you adjust the distance *"D"* between the blade and the roller, the scraper blade <u>must never</u> touch the roller.

9.4.1_LOWER ROLLER SCRAPER

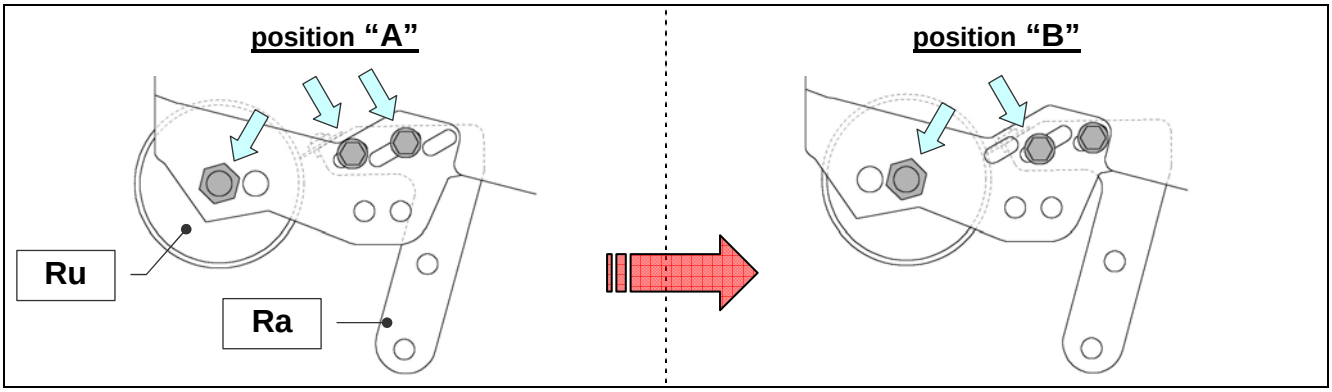
- Open the tailgate so that you can proceed with the work and lock it in place by moving the lever located on the valve block to the stop position (lock closed) *"4.5.12_Tailgate safety lock device"*.

- Loosen the 4 screws **"V"** (2 on each side) and using a hammer adjust (by lightly hammering the scraper) the distance **"D"** between the roller and the scraper blade:
- **Distance "D" = 0÷0.5mm.**
- Once the correct distance has been obtained screw back the 4 screws **"V"** and check again that the distance **"D"** has not changed as a result of tightening the screws.



- Make sure that there are no persons near the machine (if there are they must be kept away) and start the tractor again.
- Unlock the tailgate safety lock by moving the lever back to its original position and re-close the tailgate.

<u>IMPORTANT</u>! The manufacturer always mounts the door's roller and the scraper using the hole and the slots indicated by position "A" in the diagram.



If the round baler is to be used upon rocky terrain, we recommend using the following procedure to moving the door's roller and the relative scraper to position **"B"**, as shown in the diagram.

- Open the door and use the lever on the valve block to lock it in place (lock closed) *"4.5.12_door blocking safety device".*
- In order to move the scraper **"Sc"** to position **"B"**, loosen and remove its fastening screws.
- Fasten the scraper in its new position using the same screws, **without tightening them completely.**

<u>ATTENTION</u>! Use extreme caution when manoeuvring the scraper:
- **The scraper's blade is extremely sharp**
- **The scraper's weight represents a crushing hazard**

- Next, loosen and remove the screws which fasten the roller **"Ro"** in order to move it to position **"B"**.
- Fasten the roller in its new position using the same screws.

<u>ATTENTION</u>! Use extreme caution when manoeuvring the door's lower roller: its weight represents a crushing hazard.

- Next, set the proper distance **"D"** between the scraper's blade and the roller itself, as described in section *"9.4.2_Lower roller scraper".*
- Once this adjustment has be performed, tighten the screws which fasten the scraper **"Sc"** completely and double check the distance **"D"** to make sure that it has not be altered by the tightening of the screws.
- If anyone else is present, make sure that they stay at a safe distance from the machine.
- Turn the tractor back on, release the door blocking safety device by moving the lever back to its original position and close the door.

9.5_BELTS

9.5.1_BELT ADJUSTMENTS

Check the movement of the belts while they are working:

- The machine must be set up for a hard bale core, standing on flat ground and with the tailgate closed well with the side hooks.
- Engage the power take-off at low speed and watch the movement of the belts in relation to the guides from a position behind the machine.

If the belts shift towards the right, make the adjustment to position **"R1"** (on the right side), as follows:

1) Open the tailgate slightly in order to:

- loosen the belts
- then move the adjustment point **"R1"** to a position that allows adjustment to be done more easily.

Lock the tailgate in the open position by moving the lever located on the valve block to the locked position (lock closed) *"4.5.12_Tailgate safety lock device"*.

- **Stop the machine and wait for all the moving parts to stop.**
- **Turn off the tractor engine and remove the keys from the dashboard.**

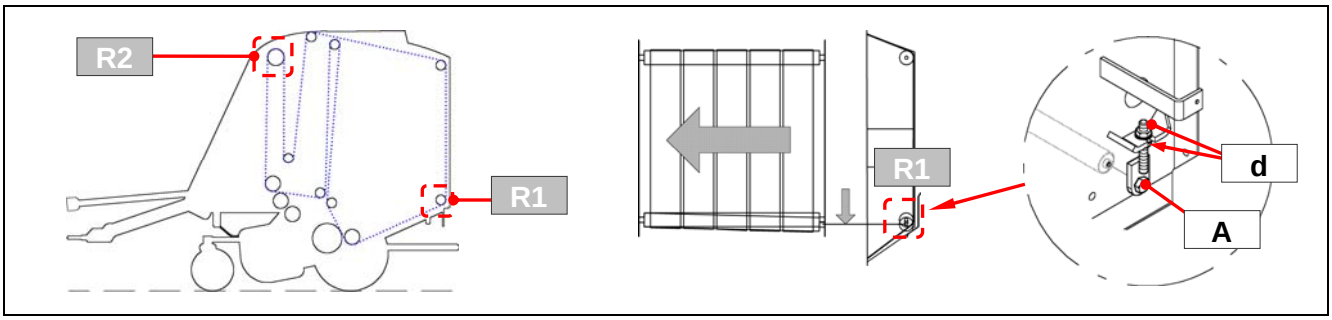
2) Loosen the screw **"A"** (right side) and screw in or out the lock nuts **"d"** of the stretcher so as to lower the extreme right of the roller; then screw back the screw **"A"** and the lock nuts **"d"**.

3) Make sure that there are no persons near the machine (if there are keep them away) and start the tractor again; unlock the tailgate safety lock by moving the lever to its original position and close the tailgate again.

4) Start the tractor and engage the power take-off at idle speed to check the movement of the belts again.

If necessary. repeat the adjustment at points **1**, **2**, **3** and **4** until the right adjustment has been made.

If the belts tend to shift towards the left carry out the same operations on the **left side.**



If the belts should also shift at the front you will have to repeat the adjustment at point **"R2"**:

a) Open the tailgate slightly to loosen the belts; lock the tailgate by moving the lever located on the valve block to the locked position (lock closed) *"4.5.12_Tailgate safety lock device"*.

- **Stop the machine and wait for all the moving parts to stop.**
- **Turn off the tractor engine and remove the keys from the dashboard.**

b) Raise the gull-wing protection guard on the side of the machine on which you intend to make the adjustment.

c) Find a position from which you can reach the adjustment point **"R2"** located under the top cover of the machine and loosen the screw **"A"**.

d) Loosen or tighten the lock nuts **"d"** of the stretcher so as to lower or raise the end of the roller; then screw back the screw **"A"** and the lock nuts **"d"**. Then close the gull-wing protection guard again.

e) Make sure that there are no persons near the machine (if there are keep them away) and start the tractor again; unlock the tailgate safety lock by moving the lever to its original position and close the tailgate again.

f) Start the tractor and engage the power take-off at idle speed to check the movement of the belts again.

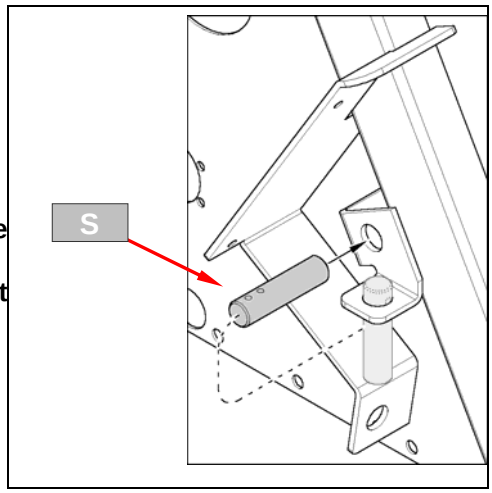
If necessary repeat the adjustment at points **a**, **b**, **c**, **d**, **e**, **f**, until the right adjustment has been made.

If you are unable to obtain a satisfactory result consult our Assistance Service.

9.5.2_BELT MAINTENANCE (REPLACING AND RECONDITIONING)

To replace or recondition the belts proceed as follows:

- fully open the tailgate;
- insert the safety pin ***"S"*** in the hole;
- when the tailgate is lowered the rocker arm rests on the ***"S"*** pin and the belts slacken.



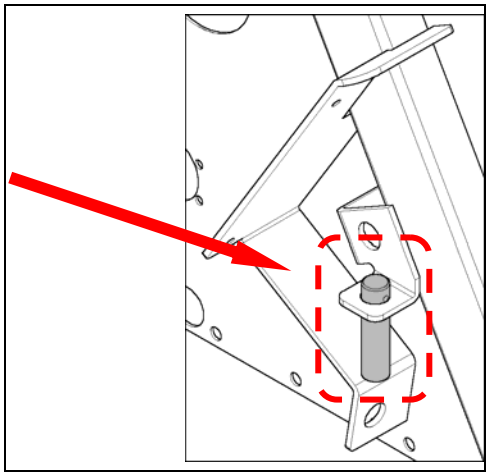
IMPORTANT!:

- **do not hydraulically insist in closing the tailgate once the rocker arm is rested on the "S" pin,**
- **do not lower the tailgate too much so as not to risk not being able to enter the machine.**

Block the tailgate with the safety device to prevent the tailgate accidentally closing *"4.5.12_ Tailgate stop safety device"*.

Now, and only now, carry out belt replacement and reconditioning.

After completing belt replacement and reconditioning:
release the tailgate safety device and reopen it completely;



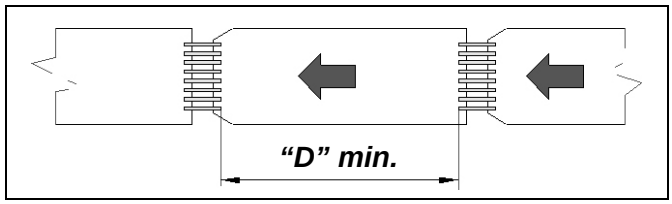
remove the *"S"* pin and return it to its housing;

- close the tailgate again.

IMPORTANT!
The "S" pin must only ever be used for the operation described above. Any other use could cause serious damage to the machine.

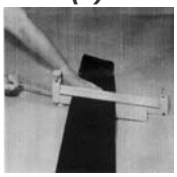
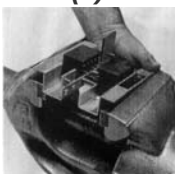
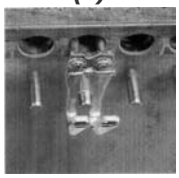
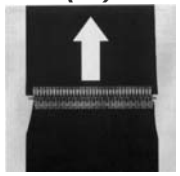
IMPORTANT! La variazione massima consentita tra la cinghia più lunga e quella più corta deve essere tra 2,5÷3cm

It is possible to add one or more sections to the belt provided that they are of the same type.



Note: Between the two clinches, you must leave a minimum distance **"D"** of **50cm**; you must also adhere to the direction of movement indicated by the arrows.

9.5.3_CLINCHING OF THE BELTS WITH A "PROFI 5" CLINCHING MACHINE

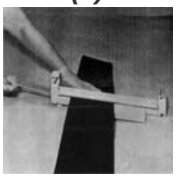
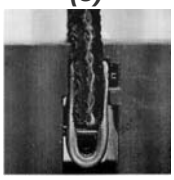
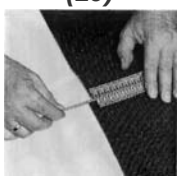
(1) 	*(2)* 	*(3)*	*(4)* 	*(5)*	*(6)*	*(7)*
(8)	*(9)*	*(10)*	*(11)*	*(12)*	*(13)*	*(14)*
(15)	*(16)*	*(17)*	*(18)*	*(19)*	*(20)* 	

1) Cut the ends of the belt at perfect right angles.
2) Position the "PROFI 5" clinching machine in the vice with the holes forward. Open the vice to the maximum.
3) Insert the rivets from the packet of clinches (fasteners) in the holes starting from the left side.
4) Two rivets of each clinch must be positioned in each hole.
5) Close the vice until the clinch touches the stopper leaving enough space to insert the belt.
6) Insert the belt in line with the marking (depending on the width of the belt and the number of clinches).
7) Hold the belt in position and strongly squeeze the rivets by closing the vice.
8) The belt must touch the rivets, closing the vice until it touches the surface of the belt.
9) Introduce the punch as far as the stopper in the left hole. To obtain a perfect riveted joint hit the punch three more times with a hammer.
10) The rest of the riveting must be done from right to left. WARNING! The weight of the hammer must be 500÷800g.
11) Open the vice and remove the belt folding it slightly backwards.
12) Insert the successive clinches and position the belt on the first pin on the left to ensure the correct pitch and continue clinching in the same way.
13) Hammer all the rivets on a flat base making sure not to crush the eyelets.
14) The desired width of the clinch pack can easily be obtained by simply twisting until it breaks.
15) Cut the protruding linking thread.
16) The method of clinching is the same for all belt widths.
17) Repeat the entire process on the other end of the belt remembering to clinch on the same side.
18) Make a diagonal cut of about 2cm leaving a border of 5mm from the clinches on both sides.
19) Connect the two ends of the belt and insert the little bar in the eyelets to ensure an exact joint.
20) When the two ends have been connected the external edges of the belt should be in line.

The arrow (figure 20) indicates the direction of movement of the belt in the machine

IMPORTANT! Take great care in mounting the belts on the machine; they must follow the direction of rotation as shown in the figure *"11.6_Belt paths".*

9.5.4_CLINCHING OF THE BELTS WITH A "PROFI 19" CLINCHING MACHINE

(1) 	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
(8) 	*(9)*	*(10)*	*(11)*	*(12)*	*(13)*	*(14)*
(15)	*(16)*	*(17)*	*(18)*	*(19)* 	*(20)*	

1) Cut the ends of the belt at perfect right angles.

2) Position the "PROFI 19" clinching machine in the vice with the holes forward. Open the vice to the maximum.

3) Insert the rivets from the packet of clinches (fasteners) in the holes starting from the left side.

4) Two rivets of each clinch must be positioned in each hole.

5) Close the vice until the clinch touches the stopper leaving enough space to insert the belt.

6) Insert the belt in line with the marking (depending on the width of the belt and the number of clinches).

7) Hold the belt in position and strongly squeeze the rivets by closing the vice. Pay attention to the markings for the different lengths.

8) The belt must touch the rivets, closing the vice until it touches the surface of the belt.

9) Introduce the punch as far as the stop in the left hole. To obtain a perfect riveted joint hit the punch three more times with a hammer.

10) The rest of the riveting must be done from right to left. Warning! The weight of the hammer must be 500÷800g.

11) Instead of a hammer it is easier and faster to use a special compressed air pistol (compressed air at max. 6bar).

12) Open the vice and remove the belt folding it slightly backwards.

13) Hammer all the rivets on a flat base making sure not to crush the eyelets.

14) The desired width of the clinch pack can easily be obtained by simply twisting until it breaks.

15) Cut the protruding linking thread.

16) The method of clinching is the same for all belt widths.

17) Repeat the entire process on the other end of the belt remembering to clinch on the same side.

18) Make a diagonal cut of about 2 cm leaving a border of 5mm from the clinches on both sides.

19) Connect the two ends of the belt and insert the little bar in the eyelets to ensure an exact joint.

20) When the two ends have been connected the external edges of the belt should be in line.

The arrow (figure 20) indicates the direction of movement of the belt in the machine

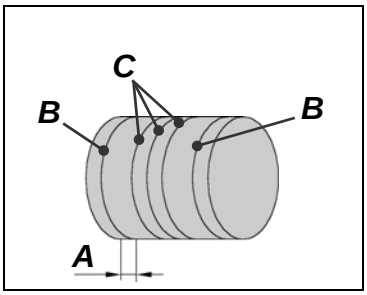
<u>IMPORTANT</u>! Take great care in mounting the belts on the machine; they must follow the direction of rotation as shown in the figure *"11.6_Belt paths".*

9.6_ADJUSTMENT OF THE BINDERS

9.6.1_DOUBLE TWINE BINDER

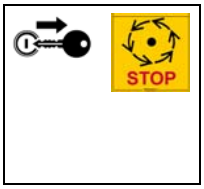
The “F_bus” control system allows you to control the parameters with which to set the double twine tying, independently of the value of the bale diameter:
“A” = distance of the twine from the head of the bale.
“B” = number of turns of twine around the head.
“C” = number of turns of twine around the centre.
To modify the values consult the paragraph:

- *QuickTronic = “10-QT.3.1_Programming”.*
- *EasyTronic = “10-ET.5.1_Program Menu”.*



<u>WARNING</u>! Before doing any maintenance or making any adjustments to the double twine binder:

- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the control system.**

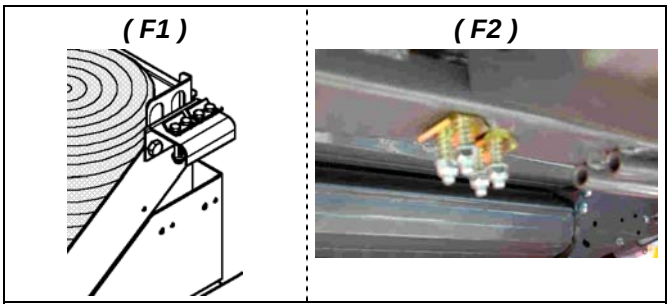


<u>Twine braking device adjustment</u>:

There are some twine braking devices on the round baler:

- ***“F1”*** located on the twine spool box,
- ***“F2”*** located on the arm of the binder,

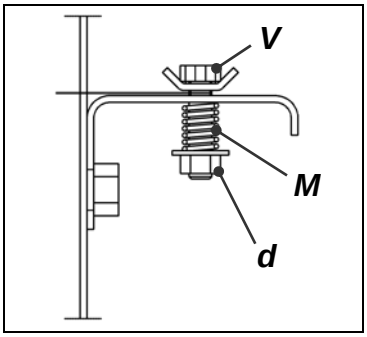
to adjust the tension of the twine.



Adjust the tension of the twine on the bale by turning the nuts **"d"** and screws **"V"** of the twine braking device, to compress or release the springs **"M"**:

- Tightening the spring **"M"**, the twine will be more taught.
- Loosening the spring **"M"**, the twine will be slacker.

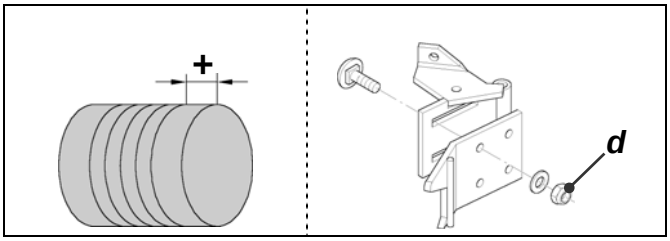
<u>CAUTION</u>! Take great care when working near the twine braking devices located on the arm of the binder, and the blade of the binder.



<u>Twine cutter blade extension</u>:

If it is necessary to tie a great deal inside the edge of the bale (twine cutter side) it may be necessary to adjust the blade arm by extending the small blade:

- loosen the four nuts **"d"** and slide the two parts to the right position.
- then tighten again the four nuts **"d"**.



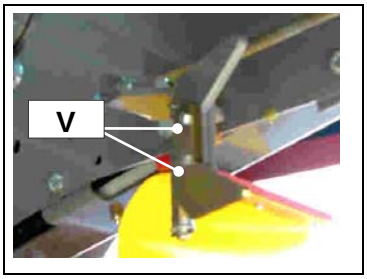
<u>Replacing the blade</u>:

If the blade of the double twine binder does not cut the twine any more, you can:

- replace it (if broken)
- turn it round (if worn).

Unscrew the 2 screws **"V"** and replace it with one that is the same or turn it round; screw it back in place with the 2 screws **“V”**.

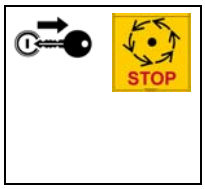
<u>CAUTION</u>! Take great care around the blade of the binder.



9.6.2_NET WRAPPER

The “F_bus” control system gives you the possibility of setting the number of turns for wrapping the bale.
To change this value consult paragraph:

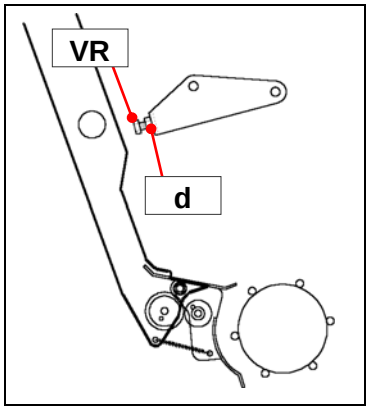
- *QuickTronic = “10-QT.3.1_Programming”.*
- *EasyTronic = “10-ET.5.1_Program menu”.*



WARNING! Before doing any maintenance or making any adjustments on the net wrapper:

- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the control system.**

Adjustment of the net arm movement:



- Raise the right gull-wing protection guard.
- Loosen the nut **"d"** and screw or unscrew the adjustment screw **"VR"**, in order to obtain the right distance of the net arm from the intermediate roller.

Note: if you tighten the screw **"VR"** too much, the arm could move forward and crash against the roller during binding. If instead, you loosen the screw **"VR"** too much, the movement or the arm could be insufficient and then the net would not be picked up and the bale not tied.

- When the right adjustment is obtained, tighten the nut **"d"** and re-close the protection guard.

CAUTION! Take great care when working near the arm of the wrapper and especially the blades.

Replacing the blade:

If the wrapper blade sections do not cut the net (the blades are worn or broken) they must be replaced:

- Remove the rivets that originally fixed the blades.
- Replace the worn or broken blades and secure them again to the wrapper arm using M6X 20 screws (instead of rivets).

CAUTION! Take great care regarding the blade sections.

9.7_ELECTRICAL AND ELECTRONIC COMPONENTS

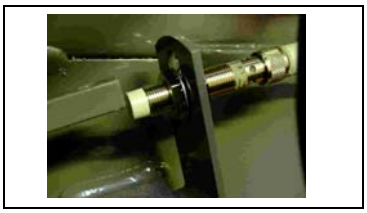
- Check that the cables of the electrical system and the control unit have not been crushed or damaged.
- Check that all the sockets, plugs, cables and sensors are always cleaned of any deposits of earth or the product.
- Check and if necessary replace broken bulbs in the lighting system.

Further information regarding the maintenance of the control unit can be found in the chapter *"10_F_bus control system".*

IMPORTANT! After the first 200 bales produced check the machine in regard to the points described above.

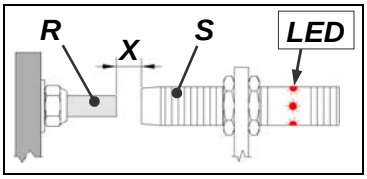
9.7.1_SENSORS

A series of **"proximity switches"** (sensors) have been placed on the round baler. These regulate and monitor the various working phases of the machine through the "F_bus" system.



Adjust the distance **"X"** between the sensor **"S"** and its abutment **"R"**, as shown in the figure (the example is only indicative):

- **"X" = 1÷3mm**



- With the "F_bus" control system switched on, turn the nuts that fix the sensor to its support in order to move it closer to or further from its abutment.
- When the **"LED"** light located on the sensor comes on this means that you have obtained the right distance **"X"**.
- Then secure the nuts and check that the **"LED"** of the sensor still comes on as the sensor may have been moved again when the nuts were tightened.

IMPORTANT! Adjust the sensors so that they never touch or collide with their abutments when working.

CAUTION! Make all the adjustments on all the sensors located on the machine observing the safety regulations and taking great care at the points where there could be particular danger.

If it should be necessary, in order to gain access to the sensors, to open or remove the guards, remember always to close them and reposition them after finishing the adjustments.

9.8_ADJUSTMENT OF THE PICK-UP

9.8.1_ADJUSTMENT OF THE WORKING HEIGHT OF THE PICK-UP

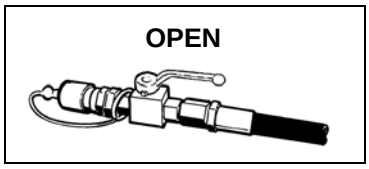
The working height of the pick-up is adjusted by moving the small wheels to one of the predetermined positions in the same way on each side of the pick-up.

<u>IMPORTANT</u>! The pick-up tines must never touch the ground; therefore adjust the working height of the pick-up so that the pick-up tines remain above the ground by a minimum of 2÷3cm.

For further information consult the paragraph *"7.6.3_ Adjustment of the pick-up wheels".*

9.8.2_HYDRAULIC RAISING OF THE PICK-UP

You can raise and lower the pick-up easily using two lateral hydraulic jacks, by moving the lever of the hydraulic distributor on the tractor, first opening the stop valve (valve lever in the **"OPEN"** position).

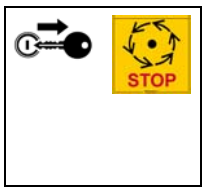


For further information consult the paragraph *"7.4.3_ Connection of the hydraulic system".*

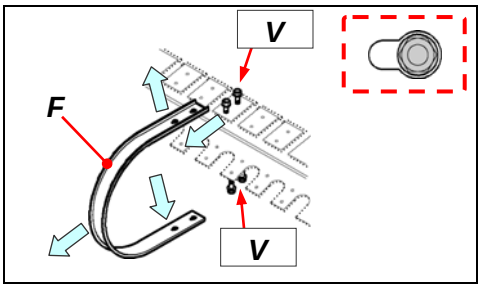
9.8.3_REPLACEMENT OF THE PICK-UP TINES

<u>WARNING</u>! If the pick-up tines mounted on the roll-holder of the pick-up have to be replaced:

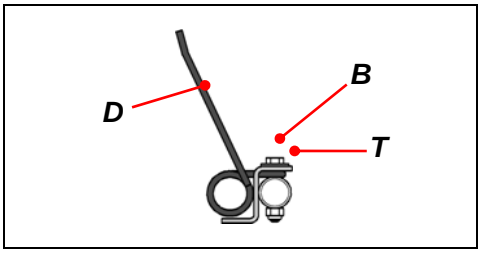
- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the control system.**



Loosen the 4 screws **"V"** (2 above and 2 below) which fix the band **"F"** corresponding to the tine to be replaced and then pull out the band, passing the head of the screws **"V"** through the hole of the slot located on the band.

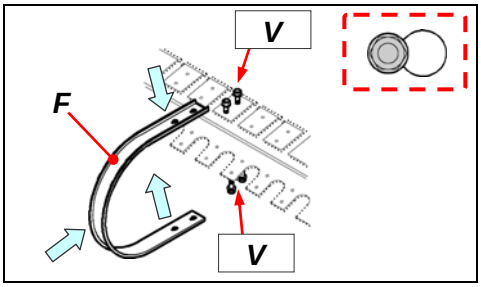


Unscrew the bolt **"B"**, remove the tine **"D"** and the related block "T". Replace the pick-up tine **"D"** with a new one of the same type. Screw back the block **"T"** and the bolt **"B"**.



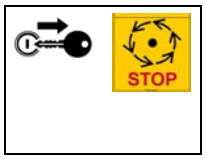
Replace the band **"F"** inserting it over the screws **"V"** and then push it all the way against the screw.

Finally screw back the 4 screws "V" with a tightening value of 15Nm



9.8.4_ADJUSTMENT OF THE PICK-UP CAM

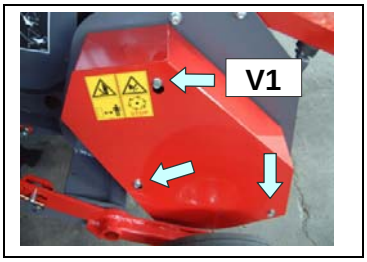
Adjust the position where the product is released from the pick-up tine by moving the cam located on the right side of the pick-up.



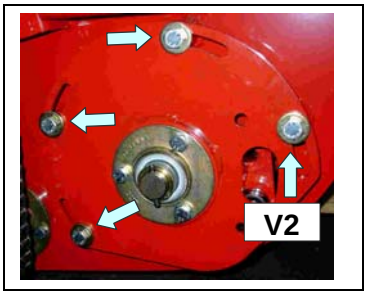
WARNING!

- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the control system.**

- Unscrew and remove the screws **"V1"** and the right guard of the pick-up.

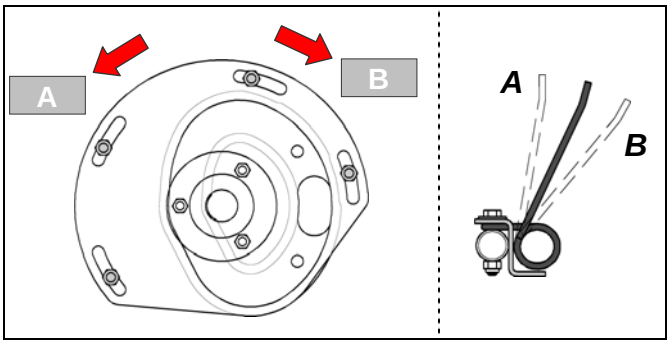


- Loosen the 4 screws **"V2"** that hold the cam.



Adjust the position of the cam, rotating it so as to move the pick-up tine nearer or further from the transport assembly (feeder if mod.LT; or rotary feeder if mod.LTR, or cutter assembly if mod.LTC).

Rotate the cam towards the position:
"A" = to move the tine nearer to the pick-up assembly.
"B" = to move the cam away from the pick-up assembly.



- Screw back the 4 screws **"V2"** to secure the cam again.
- Replace the right guard and secure it with the screws **"V1"**.

9.9_MAINTENANCE AND ADJUSTMENT OF THE CUTTER (mod.LTC)

The knives or false knives must be removed or put back whenever you do the following:

- Remove all or only some of the knives.
- Remove some of the knives for sharpening.
- Replace all or only some of the knives with false knives.

WARNING! Before removing or assembling knives:

- **Open the tailgate and lock it in position using the Tailgate safety lock device, following the instructions given in the paragraph *"4.5.12_Tailgate safety lock device"*.**
- **Before closing the tailgate remember to release its safety lock.**
- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the control system.**

- **The knives are sharp and cut easily, it is advisable to use cut resistant gloves!**

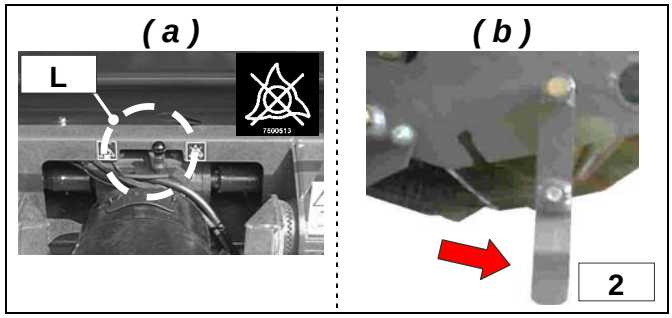
9.9.1_REMOVAL OF THE KNIVES

To remove the knives they must be **disengaged**, doing this directly from the terminal of the "F_bus" system.
In this regard consult paragraph:

- *QuickTronic = "10-QT.3.4_Cutter device".*
- *EasyTronic = "10-ET.6.3_Cutter device".*

a) Move the rotor engagement lever **"L"** to the neutral position.

b) Release the knives by moving the handle, located on the right side of the machine, to position **"2"** (lever lowered).

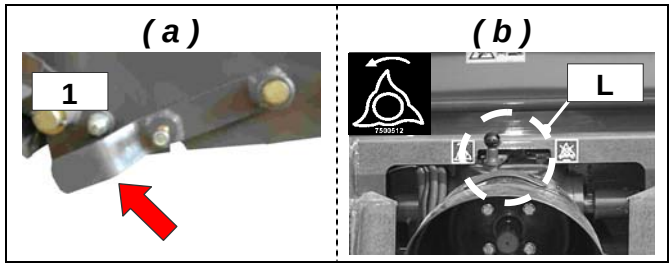


- Enter the bale formation chamber and take hold of the knives to be removed at the tip then lift and pull them out.
  To extract them more easily you can rotate the rotor manually proceeding with caution.

IMPORTANT! It is necessary to put false knives in the place of the knives removed so that the product does block up the seats of the knives and make it difficult to replace the knives later.

a) When you have finished this operation, anchor the knives again moving the handle to position **"1"** (lever raised).

b) Shift the engagement lever **"L"** back to the drive position.

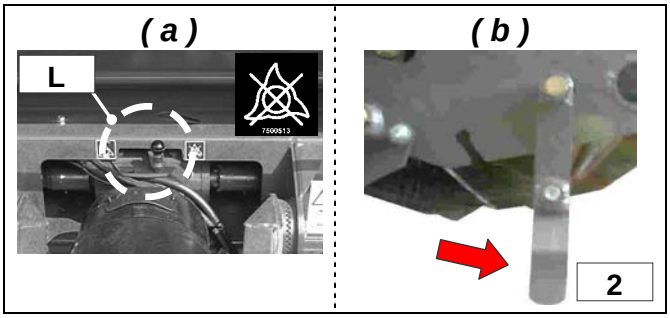


9.9.2_ASSEMBLY OF THE KNIVES OR FALSE KNIVES

To mount the knives or the false knives, the knives must be **disengaged** doing this directly from the terminal of the "F_bus" system.
In this regard consult paragraph:

- *QuickTronic = "10-QT.3.4_Cutter device".*
- *EasyTronic = "10-ET.6.3_Cutter device".*

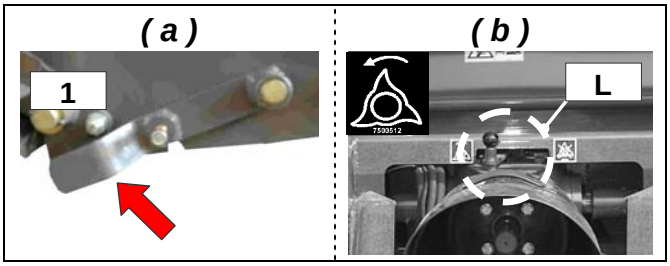
a) Move the rotor engagement lever **"L"** to the neutral position.
b) Release the knives by moving the handle, located on the right side of the machine, to position **"2"** (lever lowered).



- Enter the bale formation chamber and insert the knives or false knives in the slots.
  To make this easier you can rotate the rotor manually proceeding with caution.
- Make sure that they are correctly inserted on the pin.

IMPORTANT! If the knives or false knives are not correctly anchored there is the danger that they will enter the bale formation chamber together with the product to be baled.

a) When you have finished this operation anchor the knives again by moving the handle to position **"1"** (lever raised).
b) b) Move the engage lever **"L"** back to the run position.

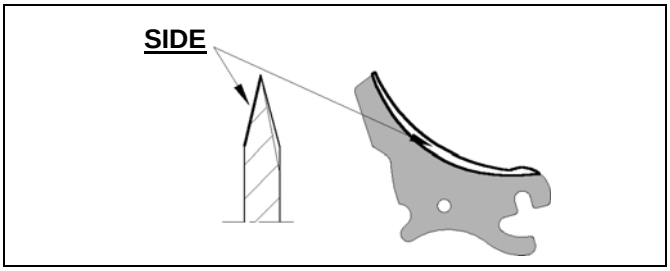


9.9.3_SHARPENING OF THE CUTTER KNIVES

The knives should be sharpened with suitable equipment whenever necessary.
Bear in mind that knives sharpened well reduce the power requirement and give a better quality cut.

IMPORTANT! When sharpening, be careful not to cause the knives to heat up as this can compromise their resistance to wear.

- **Only one SIDE of the knife should be sharpened.**



WARNING!

- **Always work with care bearing in mind the safety regulations.**
- **The knives are sharp and cut easily; handle them with great care and always use adequate gloves and/or protective gear.**

9.10_WHEELS AND TYRES

Tyres of various dimensions can be fitted on the round baler. Check the inflation pressure regularly for the type of tyre fitted to you machine referring to the pressure values given in the table *"11.5_Tyre pressure values".*

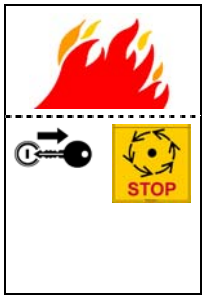
- The inflation pressure of the **pick-up wheels** should be: **2,5bar**.
- Check the torque of the nuts on the stud bolts of the wheel hubs regularly. It should be **250Nm**.
- Repairs to the wheels and tyres must be done by specialised personnel provided with suitable equipment.

9.11_BOLT TIGHTENING

Regularly check the securing bolts and screws and if necessary adjust them to the torque values advised in the table *"11.4_Torque wrench settings"*.

- Check if all the bolts are correctly tightened after the first three hours of work.
- Check if all the screws and bolts are correctly tightened after the first 10 bales formed by the machine.

9.12_WELDING



WARNING! FIRE RISK!

- **Never do welding work on your baler when there is a bale inside the chamber.**

Before doing welding work on your baler:

- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Disconnect all the electrical and electronic functions**
- **Switch off the control system.**

For further information consult the chapter *"4.2_Safety warnings"*.
In any case take great care in these operations.

9.13_LUBRICATION

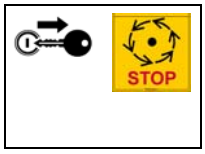
Regular lubrication is the best guarantee against breakdowns and repairs. Apply lubricants regularly and always use good quality greases and oils.

IMPORTANT!

- **In general use grease type: AGIP GR MU EP0**
- **In the transmission box use oil type: AGIP BLASIA EP 150**
- **In the automatic oil system tank for the chains use oil type: AGIP OSO 100**

- Lubricate and grease all rotating parts: crown wheels, supports, bearings, chains, pins and shafts

WARNING! Always apply lubricants in respect of the safety regulations contained in the chapter *"4_General safety regulations"*.



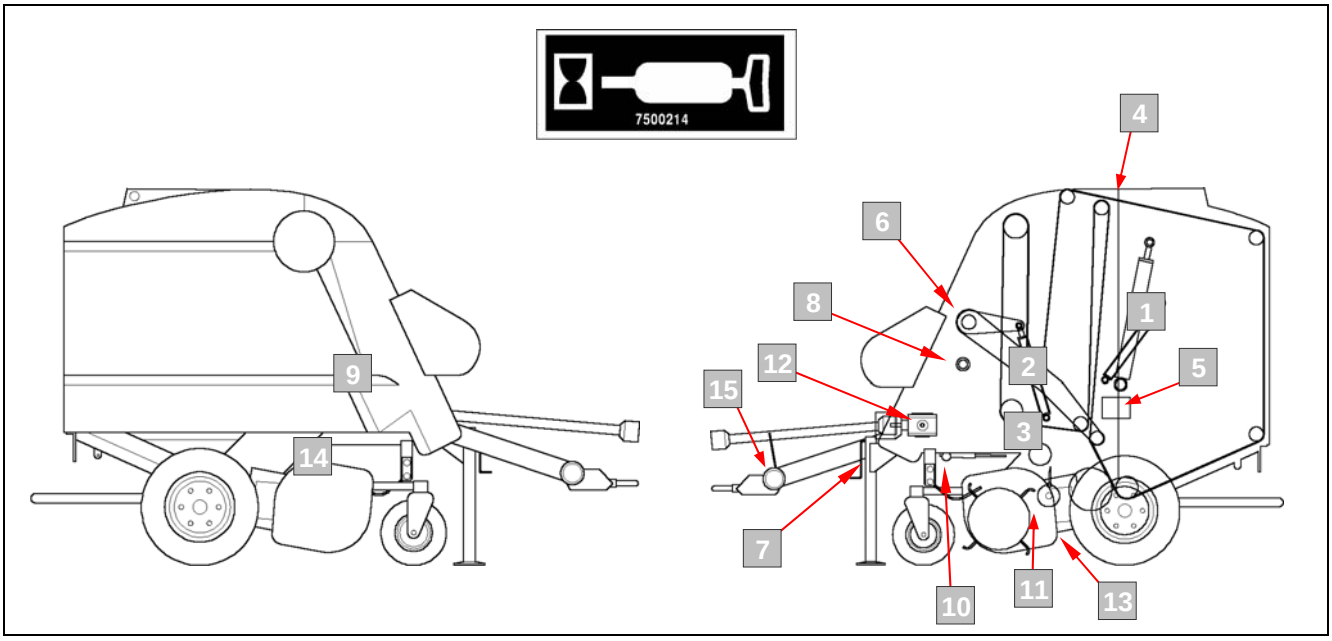
Before greasing or oiling you baler:

- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the control system.**

Note: if it should be necessary to open or remove any guards in order to access the various lubrication points, always remember to close and reposition them afterwards.

9.13.1_GREASING

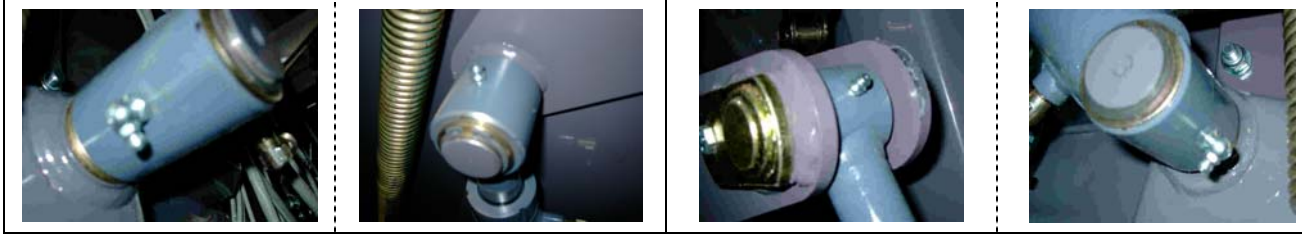
Lubricate and grease all the points indicated by the special adhesive signs: **"7500214"**, present on the machine every 30 hours of work.



- Before injecting grease into the greasers it is necessary to clean carefully the greaser fittings to prevent mud, dust or foreign bodies from mixing with the grease which would reduce or even annul the effect of the lubrication.
- Injecting a large quantity of grease under high pressure could damage the protection of the bearings; therefore do this operation with due care.

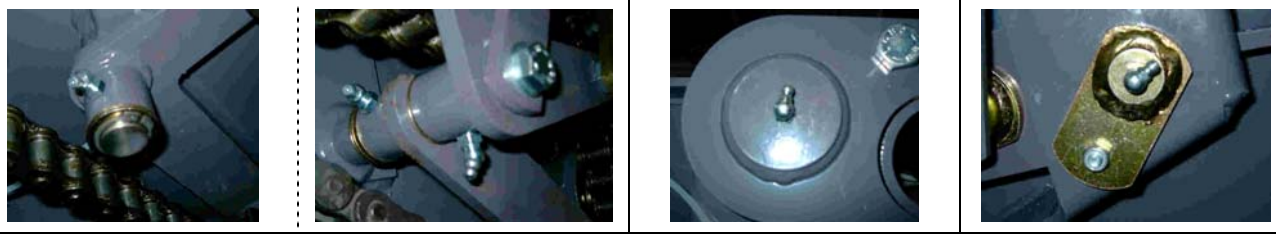
List of the various lubrication points present on the baler:

(1) ***(2)***

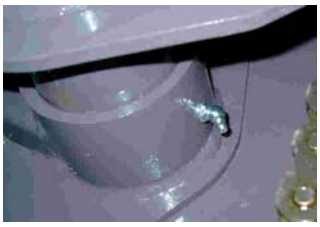
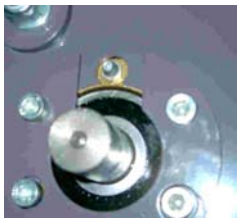


1) Tailgate jack (right and left sides).
2) Pressure jack (right and left sides).

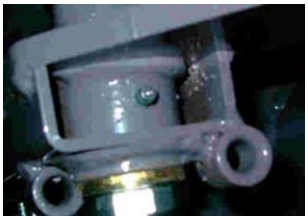
(3) ***(4)*** ***(5)***



3) Automatic chain stretchers (left side).
4) Tailgate hinges (left and right sides).
5) Tailgate hooks (left and right sides).

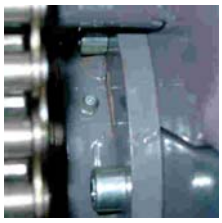
(6)	(7)	(8)	(9)
			

6) Main belt stretcher arm (right and left sides).
7) Parking jack.
8) Net counter roller (right and left sides).
9) Net release (right side).

(10)	(11)	(12)	(13)
			

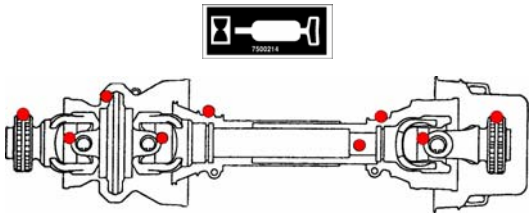
10) Twine binder arm.
11) Pick-up transmission safety device (left side).
12) PTO shaft.
13) Feeder connector rod (left side - mod.LT).

(14)



14) Rotor support (left side - mod.LTR and LTC).

(15)



15) Cardan shaft: lubricate and grease according to the instructions contained in the user and maintenance booklet provided together with the cardan shaft.

9.14_HYDRAULIC OIL

The hydraulic controls are high precision components and require clean filtered oil:

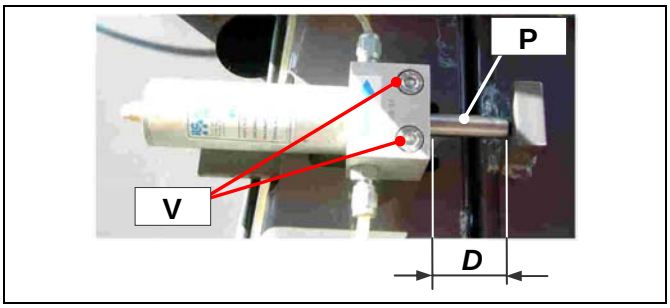
- Regularly check the level and state of contamination.
- Check the seal and locking of the hydraulic tubes and for any oil leaks.
- Check and top up the oil in the transmission box and the automatic oil tank.

IMPORTANT! Use the oils advised by FERABOLI S.p.A. in chapter *"9.13_Lubrication"*; another type of oil could create pumping problems.

9.14.1_AUTOMATIC OILING OF THE CHAINS

The round baler is provided with an automatic oiling system for the chains.
This system works every time the tailgate closes by means of the movement of a small pump.
The flow of oil can be regulated by adjusting the travel of the piston **"P"** located on the small pump.
If the flow of oil coming out is too low or too high, adjust the distance **"D"** so as to increase or decrease the travel of the piston of the small pump:

- Open the left lateral protection guard and move to a position where you can reach the small automatic oiling pump located directly under the hinge of the guard.
- Loosen the two hexagonal bolts **"V"** and slide the pump along the slots in order to increase or decrease the distance **"D"**:



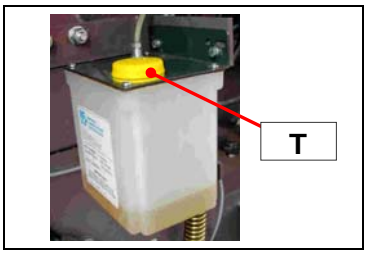
THE GREATER the distance **"D"** the greater is the flow of oil pumped and put into circulation by the automatic lubrication system of the chains.
THE SMALLER the distance **"D"** the smaller is the flow of oil pumped and put into circulation by the automatic lubrication system of the chains.

- Screw back the two hexagonal bolts.
  The maximum travel allowed is at least.
- After making the adjustment, re-close the left lateral guard.

9.14.2_TANK

Check and top up the oil tank of the automatic oiling system of the chains:

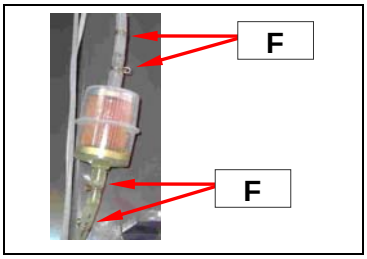
- Open the left lateral protection guard.
- Unscrew the plug **"T"**, fill up the oil tank and screw back the plug **"T"**.
  The oil capacity of the tank is 1.5 litres.
- After filling the tank re-close the left lateral guard.



9.14.3_FILTER

Regularly check the condition of the filter of the automatic chain oiling system; if you have to replace it:

- Open the left lateral protection guard.
- Loosen the clamps **"F"** and replace the filter with a new one of the same type.
- Screw back the 2 clamps **"F"**.
- Re-close the left lateral protection guard.



9.14.4_MANUAL OILING OF THE CHAINS

<u>WARNING</u>! Never do this maintenance work with the baler working:
- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the control system.**

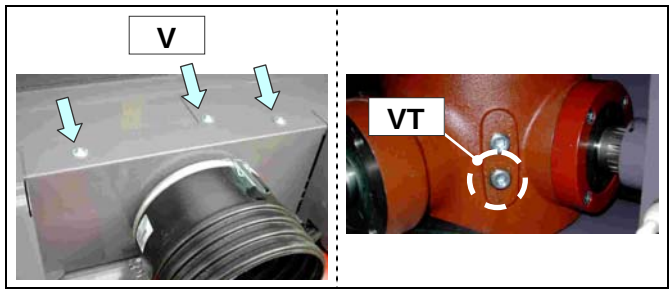
All the chains that are not oiled by the automatic oiling system must be lubricated manually using a mixture of oil and grease.
Regularly check and lubricate these chains with special care for the transmission chains of the pick-up,

9.14.5_DEVIATION BOX

<u>WARNING</u>! Never do this maintenance work with the baler working:
- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the control system.**

Regularly check the oil level in the transmission box.

- Unscrew and remove the screws **"V"** and remove the transmission box protective guard.
- Unscrew and remove the screw plug **"VT"** so as to be able to check the oil level inside the box. If the oil comes out of the box or is at the same level as the hole of the screw plug **"VT"**, then the oil level is correct.

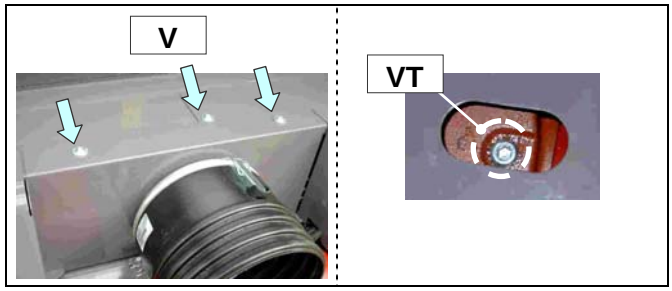


- Replace the guard and screw it into position with the screws **"V"**.

<u>IMPORTANT</u>!
- **Regularly check the oil level in the transmission box every 1000 bales and every 50 working hours.**
- **Use the oils advised by FERABOLI S.p.A. in chapter *"9.13_Lubrication"*.**

If the quantity of oil contained in the transmission box is insufficient then it must be topped up:

- Unscrew and remove the screws **"V"** and remove the protective guard of the box.
- Unscrew and remove the screw plug **"VT"** located on the top part of the box, which can be reached through the hole in the front protective guard, and top up the oil in the box.

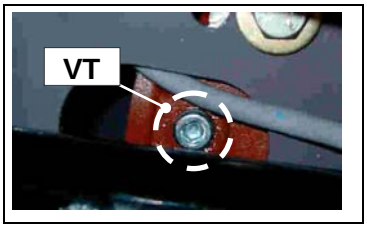


<u>The quantities of oil needed are</u>:
- **0,9 litres for the box on model LT**
- **1,2 litres for the box on model LTR and LTC**

Then check that the oil level in the transmission box is correct following the instructions above.

- When finished re-close with the screw plug **"VT"**.
- Replace the guard and screw it back in place with the screw **"V"**.

To drain oil from the transmission box:



- First obtain a container to collect the oil to be discharged.
- From a position under the machine unscrew and remove the screw plug **"VT"** located at the bottom of the box which can be reached through the hole located on the crosspiece on the machine frame.
- Drain the oil from the box into the container you obtained previously.
- The screw back the plug **"VT"**.

IMPORTANT! Observe the laws in force in your country regarding the use and disposal of oils and lubricants.

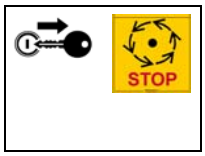
9.15_CLEANING

WARNING! Before doing any cleaning operations:
- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the control system.**

IMPORTANT!
- **Do not use abrasive products, solvents or alcohol.**
- **Do not use high pressure water jets, especially on the cables.**

- Keep the engine transmission clean in regard to twine, net or the product on order not to damage bearings and seals; all the gears and chains must also be kept clean.
- Never allow corrosive chemical agents to come into contact with the cylinders to avoid altering the surface of the piston.
- Check that deposits of earth or the product are cleaned off all the sockets, plugs, cables and sensors located on the round baler; wipe them with a damp cloth.
- Clean the terminal display with a damp cloth and a delicate detergent to avoid erasing the silk-screen printing on the panel.

9.16_AFTER THE FIRST 30 HOURS OF WORK



WARNING! Before carrying out any inspections or checks:
- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the control system.**

IMPORTANT! Every new machine must be inspected after the first 30 hours of work, with checks on the following:
- **Correct tightening of all the bolts and screws.**
- **All the transmission chain tension values.**
- **The absence of oil leaks from all the components of the hydraulic system.**
- **The inflation pressure of the tyres.**
- **The correct lubrication of the transmission parts.**

- Keep to the lubricants advised.
- Spare parts must meet the requirements as defined by **FERABOLI S.p.A.**

USE ONLY ORIGINAL SPARE PARTS.

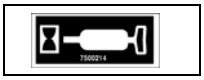
9.17_DAILY CHECKS

WARNING! Before doing any daily inspections or check

- **Stop the tractor, remove the keys from the dashboard and wait for all the moving parts of the machine to stop completely.**
- **Switch off the control system.**

Every day check the general condition of the machine: the wear of the crown wheels, supports, bearings, chains, pins, shafts and all the moving and rotating parts of the machine.

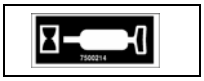
Do a complete greasing.



IMPORTANT! Before using the machine each time make sure that there are no oil spots on the ground. If there are oil spots DO NOT START the machine.
Find out where the oil leak is and after determining the extent of the damage contact the authorised assistance service.

The following checks should be done with regular frequency (and in any case at the beginning of each season) following the instructions given in this manual:

- Check and change the oil.
- Check correct tightening of the bolts and screws.
- Lubricate or grease every point where needed.



- Check the correct working of the electrical system.
- Check the tyre inflation pressure.
- Before moving the machine to the field, check the correct working of the machine and the absence of any irregular vibrations or unusual noises.

9.18_SPECIAL MAINTENANCE

IMPORTANT! In the event of any breakage or poor functioning, contact your FERABOLI S.p.A. dealer directly.

9.19_STORAGE

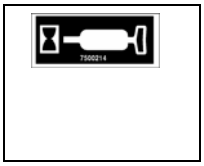
IMPORTANT!

- **If these operations are carefully done you will have the benefit of a machine in excellent condition that is ready to resume work.**
- **If the machine is to be scrapped, respect the laws in force regarding pollution and the disposal of lubricants in your country.**

9.19.1_STORAGE OF THE MACHINE

At the end of the season, or if a long period of rest is foreseen, the following instructions should be followed:

- Make sure that the machine is completely unloaded.
- Release the pressure in the hydraulic circuit.
- Store the machine in a closed area under surveillance in order to prevent the entry of unauthorised persons.
- Keep the machine in a dry place, protected from adverse weather conditions and on a suitable flat surface. To avoid sudden unwanted movements of the machine, place wedges under the wheels.
- Make sure that all the guards on the machine are in their correct positions.
- Thoroughly clean the machine, dirt attracts humidity and as a result the metallic parts can rust.
- Inspect everything carefully and if necessary replace any damaged or worn parts.
- Carefully lubricate all the required points, apply antirust or oil or grease to all the metallic parts not covered with paint or with paint peeled off to protect from rust.
- Oil the blades of the binders, clean and oil all the chains.
- Grease all the exposed parts of the cylinder rods and electrical actuators.



- Clean the belts and check the condition of the clinches (fasteners).
- Cover the baler with a plastic sheet.

9.19.2_STORING THE “F_bus” SYSTEM

- Remove the control terminal.
- Keep them in a dry place protected from inclement weather, dust, humidity, insects and rodents.

9.19.3_STORAGE OF THE CARDAN SHAFT

- Remove the cardan shaft and place it in a dry protected place.

For further information read the instruction and maintenance booklet of the cardan shaft provided together with it.

9.19.4_STORAGE OF THE TWINE, NET AND PLASTIC SHEET

The twine spools, rolls of net and plastic sheet must be removed from the machine and stored in their respective boxes in a dry protected place.
Keep these boxes in a place protected from the possible attack of rodents.

IMPORTANT!

- **Handle the twine spools, rolls of net and plastic sheet with care so as not to cause injury.**
- **The sun's rays can damage the plastic film.**

9.20_BEFORE RESUMING WORK IN THE FIELD

Before resuming work check the condition of your machine thoroughly and do all the necessary maintenance as described in this manual *"9_Maintenance and adjustment"*.

- Reread this operator manual.
- Always observe the safety regulations contained in this manual *"4_General safety regulations".*

9.21_SPARE PARTS

USE ONLY ORIGINAL SPARE PARTS.

All the parts of the baler can be requested from the **FERABOLI** Spare Parts Service by specifying:

- Model of the machine.
- Serial number of the machine.
- Year of manufacture.
- Code number of the part desired (found in the spare parts catalogue), description and quantity.

Finally, please remember that **FERABOLI S.p.A.** is available for any need for assistance or spare parts; you will find the list of telephone and fax numbers on the last page of this manual.

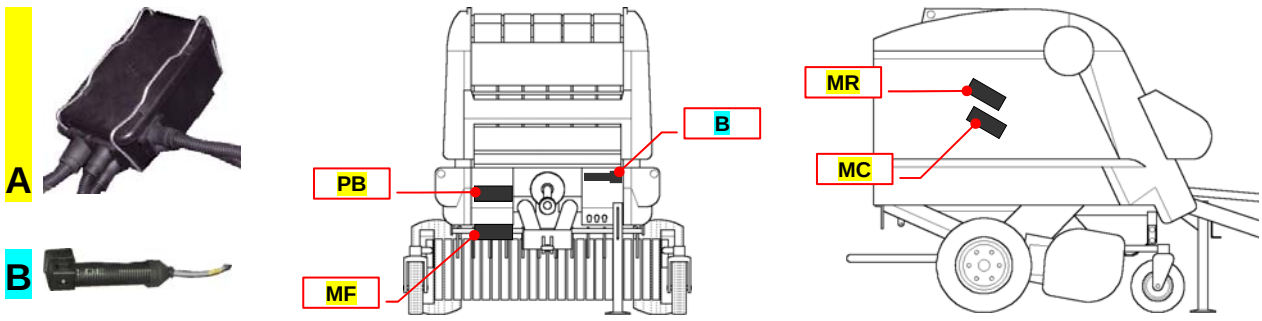
10_ "F_bus" CONTROL SYSTEM

A description of the electronic **"F_bus"** control system is given in this chapter

Using the terminal, the operator can set parameters and monitor the various work phases of the machine from the correct loading of the collection chamber to the growing diameter of the bale, binding, bale ejection and closing the machine for a new work cycle.

10.1_ "F_BUS" SYSTEM COMPONENTS

Consists of control units that dialogue with each other through an "F_bus" terminal.



Roundbaler model LT-LTR-LTC	**Roundbaler model BASIC**
A) :	***A) :***
"PB" = POWER BOX	**"PB"** = POWER BOX
"MF" = TWINE module	**"MF"** = TWINE module
"MC" = CUT module	**"MC"** = CUT module
"MR" = NET module	**"MR"** = NET module
B) :	***B) :***
"PE" = PRESSURE module	**"GV"** = SOFT CORE module

The electronic **"F_bus"** control system can be used with the following terminals:

"QuickTronic" terminal	**"EasyTronic"** terminal

The terminal will be installed on the tractor and, by means of the display, it will dialogue with the operator sending commands to be executed by the machine through the control units.

***Note*: check the terminal type that you are using and follow the pertinent instructions shown in this operator's manual:**

- chapter **10-QT_"QUICKTRONIC" TERMINAL**
- chapter **10-ET_"EASYTRONIC" TERMINAL**

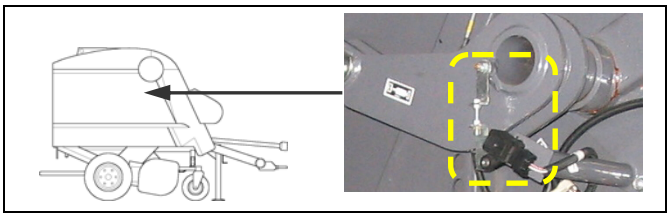
10.1.1_FUSES

The POWER BOX "PB" module contains fuses type "RL MINI LAMA FASTON 2,8mm" in accordance with standard DIN 72581/3F.
For further information see paragraph *"11.9_Fuses".*

10.2_PARTS

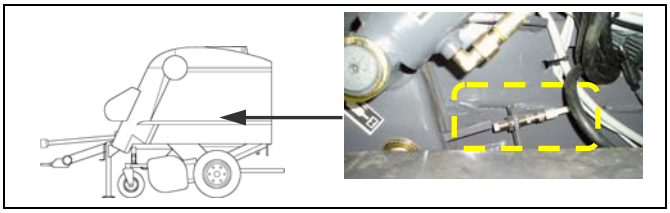
10.2.1_BALE DIMENSION SENSOR (right side)

This is a rotary potentiometer which, connected by some levers to the main belt stretcher, transmits the instantaneous value of the bale diameter



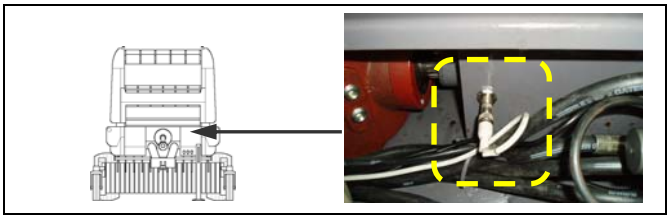
10.2.2_TAILGATE CLOSURE SENSORS (both sides)

Two active sensors, one on each side of the machine, monitor the closure of the tailgate before and during each work cycle.



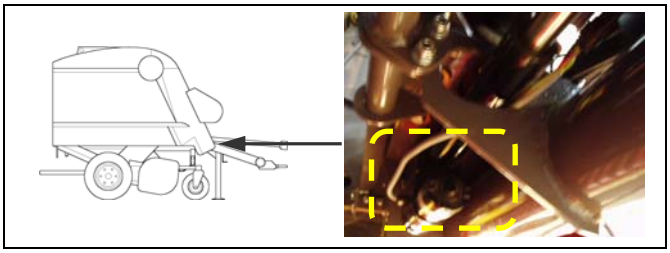
10.2.3_PTO SENSOR

A active sensor measures the number of rpm of the PTO to be used by the control the binding.



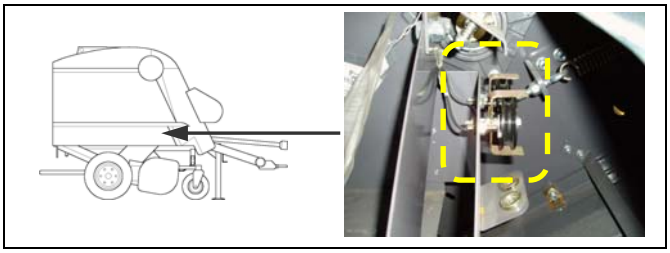
10.2.4_TWINE BINDER ACTUATOR

The twine binder is controlled by a linear electrical actuator provided with a potentiometer that controls its position.



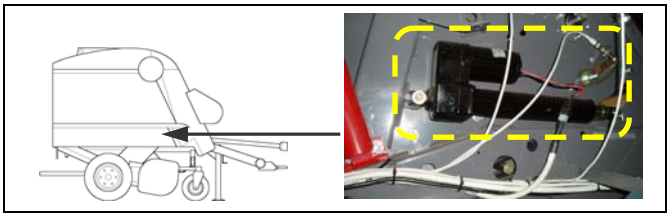
10.2.5_TWINE FEED SENSORS (right side)

Two proximity switches, one per pulley, monitor the feed of the twine during the binding process and signal any problems.



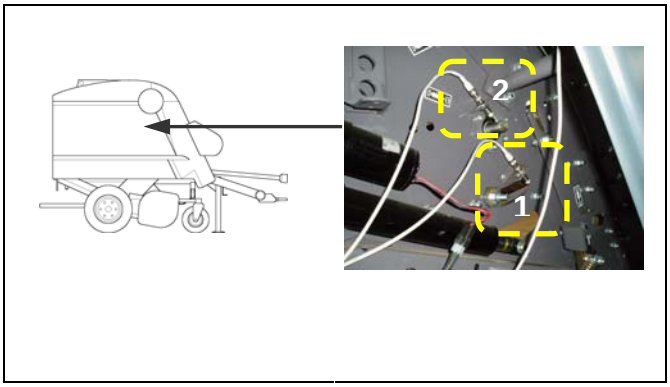
10.2.6_NET WRAPPER ACTUATOR (right side)

A linear electrical actuator regulates the movement of the net arm when the net is introduced and in the successive cutting phase.



10.2.7_NET ARM REST SENSOR (right side)

The travel of the net wrapper actuator is stopped by a proximity switch **(1)** in order to allow the bale to complete the selected number of turns required for wrapping.

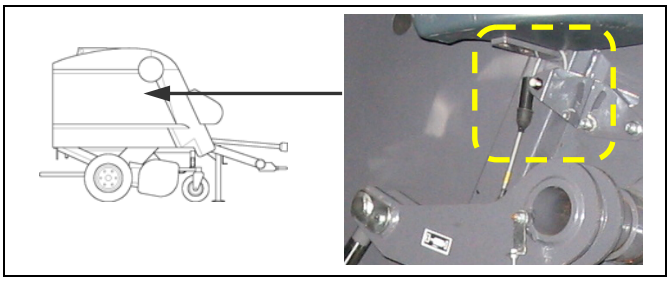


10.2.8_NET COUNTER SENSOR (right side)

A proximity switch **(2)** counts the number of turns of the net feed roller. The control system transforms this value into metres of net set in the programme giving the actuator permission for the successive phase of cutting the net.

10.2.9_MAXIMUM CHAMBERS SENSOR

An active sensor indicates the maximum possible loading of the bale chamber.

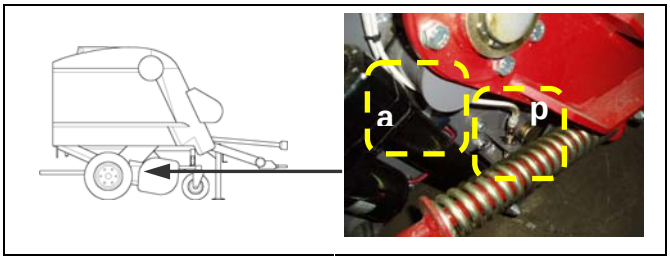


10.2.10_KNIVES ACTUATOR (mod.LTC – right side)

A linear electrical actuator **(a)** controls the engaging and disengaging of the knives for cutting the product.

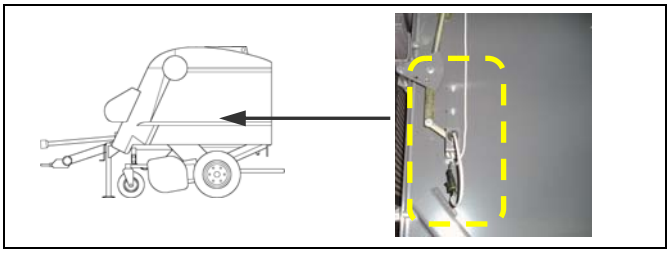
10.2.11_KNIVES ENGAGED SENSOR (mod.LTC – right side)

A proximity switch **(p)** indicates that the knife bar has arrived at the engaged position.



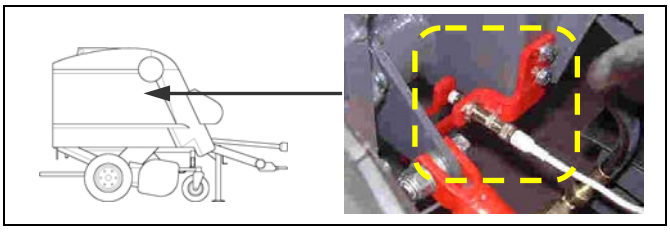
10.2.12_CHAMBER LOADING SENSORS (both sides)

Two active sensors are connected to two arms that following the movement of the belts, indicate the direction for a homogenous loading of the chamber.



10.2.13_BALE EJECTION DISTANCE SENSOR (optional - right side)

A active sensor switch signals the ejection of the bale to a distance outside the radius of closure of the tailgate.

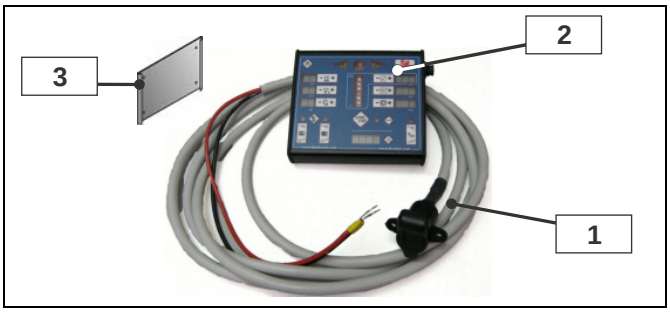


10-QT_"QUICKTRONIC" TERMINAL

10-QT.1_INSTALLATION

Check that you have the following material available in the box provided with the machine:

1) Feeder cable
2) Terminal
3) Dovetail



10-QT.1.1_FEEDER CABLE

With the tractor switched off, disconnect the battery earth wire, then connect feeder cable to the terminals of the 12 V battery, connecting the red wire **(+)** to the positive and the black wire **(-)** to the negative pole.
Reconnect the earth wire

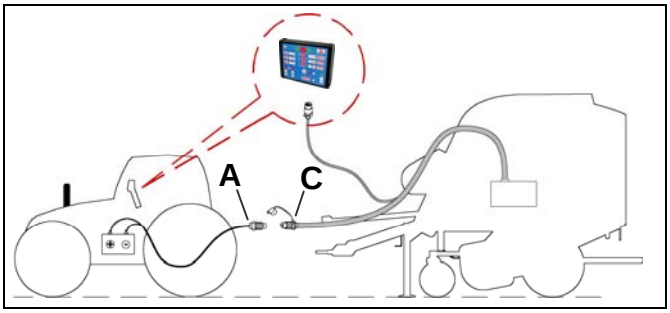
WARNING!: some feeder cables may be brown or blue. In this case the brown wire is the positive **(+)** and the blue wire is the negative **(-)**.

Secure the cable along the tractor so as to bring the COBO connector to the position most convenient for you but at the rear of the tractor nevertheless.

CAUTION!:

- Make sure not to invert the polarity.
- Tighten well the clamps that secure the power cable to the tractor batteries; otherwise there could be malfunctions.

Now connect the power cable **"C"** to the power cable **"A"** previously installed on the tractor.
Make sure that the tab of the cover of the female COBO connector of the power cable **"C"** is inserted in the slit of the of male COBO connector of the power cable **"A"**. This will prevent accidental disconnection of the two cables with consequent blackout of the system.



Fix the dovetail in the tractor cabin so that the terminal can be reached easily by the operator.
The terminal is inserted on the dovetail during work.

10-QT.1.2_DATA TRANSMISSION CABLE

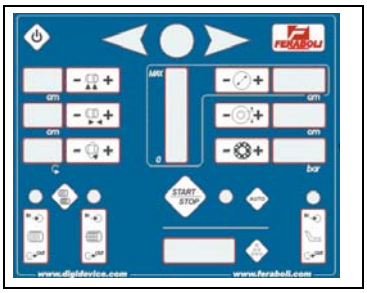
Connect the transmission cable provided with an eight pin connector to the control-box and secure it using the clamp of the ring nut.

WARNING!: check that the cables do not obstruct driving movements and are not near the moving parts.

Press the **"ON-OFF"** key on the terminal and check that it comes on!

10-QT.2_FUNCTIONS OF THE "QUICKTRONIC"

10-QT.2.1_DESCRIPTION OF THE TERMINAL

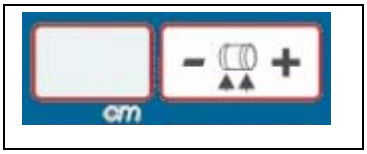


The terminal has:

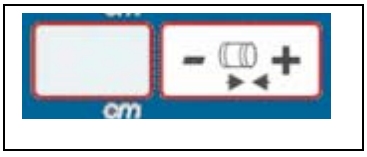
- **LED** and **PILOT** lights that call for attention,
- **KEYS** for setting the various functions and activating the various devices, plus the relative **DISPLAYS** for displaying data,
- a **DISPLAY** for showing the counting of the bales and error messages.

10-QT.2.2_FUNCTION OF THE KEYS

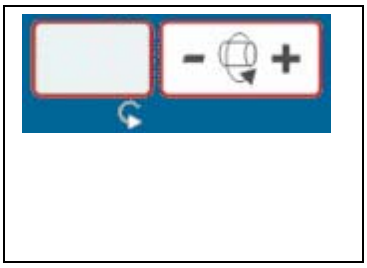
"ON-OFF"
Key for switching the system on and off.



Key for setting and changing the value of the number of turns of twine on the edges.
The relative display shows the number of turns on the edges programmed in twine binding.

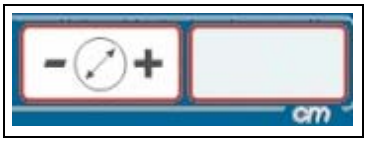


Key for setting and changing the value of the distance of the twine from the edges of the bale.
The relative display will show the distance of the twine from the edges in twine binding.

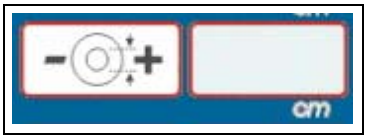


Depending on the type of binder active (binder selected), this key can:

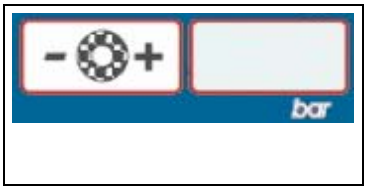
- **TWINE binder:** change the value of the number of central turns of twine.
  In this case the display shows the number of central turns programmed in the twine binding.
- **NET wrapper:** change the value of the number of turns of net.
  In this case the display shows the number of turns of net programmed for wrapping.



Key to set and modify the binding diameter programmed.
The relative display will show the value of the diameter programmed.



Key for setting the dimension of the soft core
The relative display will show the value of the soft core set.



Key for setting and modifying the value of the pressure.
(only model LT-LTR-LTC).
The relative display shows the value of the pressure of the bale.
If the soft core has been set, the pressure will be metered starting from the end of the soft core.

TWINE-NET" key for selecting the type of binder (twine binder or net wrapper) to be used:

- **TWINE** binder
- **NET** wrapper

"TWINE" key for manual movement of the twine binder.
The green LED on indicates that the twine binder is active and will be used in the binding cycle.

- **IN =** moves the binder arm into the chamber
- **OUT =** moves the binder arm back to the rest position

The LED becomes red in the manual mode when the twine binder has reached the end stop.

"NET" key for manual movement of the net wrapper.
The green LED on indicates that the net wrapper is active and will be used in the wrapping cycle.

- **IN =** moves the wrapper arm into the chamber
- **OUT =** moves the wrapper arm back to the rest position

The LED becomes red in the manual mode when the net wrapper has reached the end stop.
The LED becomes orange when the arm is in the rest position.

"CUT" key for manual movement of the cutter device CUT.

- **IN =** knives engaged (orange LED on)
- **OUT =** knives disengaged (LED off)

"START-STOP"
With this key it is possible to do the following:

- Start a binding cycle,
- Stop a binding cycle in progress,
- Return to the automatic mode if the motors are in manual mode,
- Confirm seeing an alarm code shown on the counter display.

"AUTO" key to activate or deactivate the automatic start of the binding cycle.

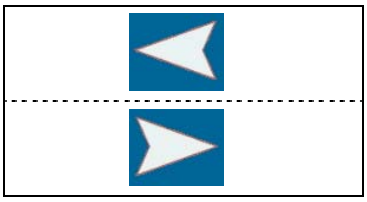
- **LED on =** binding in **AUTOMATIC** mode
- **LED off =** binding in **MANUAL** mode

"COUNTER" key to select the type of counter to be shown on the relative display.
This key is also useful for manual advance in the ejection phase when the bale is blocked.
This display also shows auxiliary information, such as alarm codes.

The machine status **PILOT LIGHT** will advise you of the various work operations and/or problems arising by flashing or remaining constantly on in different colours.
For further information see paragraph *"10-QT.8_Alarms".*

Left chamber loading **PILOT LIGHT**.

Right chamber loading **PILOT LIGHT**.



These two pilot lights can be switched on/off or come on gradually depending on the type of sensors installed on your machine.

The diameter **BAR** shows the product loading state in the chamber.

10-QT.3_NORMAL SWITCHING ON FOR WORK

Press the **"ON-OFF"** key (you have to keep the key held down for a few seconds) to switch on the system.

Now you have to set the system to the values with which you intend to work.

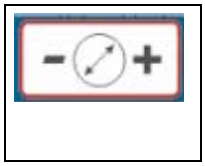
Whenever you switch on the "F_bus" system it memorises the work settings previously programmed.

10-QT.3.1_PROGRAMMING

All the settings of the program that you are using can be seen on the various terminal displays.
You can change the values of the program settings depending on your work requirements as follows:

"<u>Bale diameter</u>"

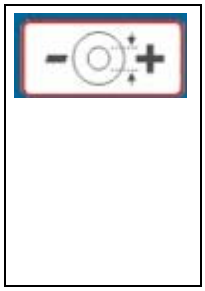
Press the keys **"+"** and **"-"** to set the final diameter value of the bale you wish to produce:



- **minimum diameter = 50cm**
- **maximum diameter = 165cm**
- **regulation step = 1cm**

"<u>Soft core diameter</u>"

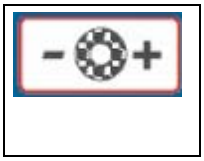
Press the keys **"+"** and **"-"** to set the value of the soft core diameter you wish to form inside your bale:



- **minimum soft core diameter = 56cm**
- **maximum soft core diameter = 70% compared to the Ø final of the bale (max diameter allowed 110cm)**
- **regulation step = 1cm**

If you wish to produce bales with hard cores, you must keep the **"-"** key until the wording **"OFF"** appears. In this case the soft core will be deactivated automatically.

"Final pressure" *(only model LT-LTR-LTC)*



Press the keys **"+"** and **"-"** to set the value of the final pressure of your bale (working pressure outside the soft core):

- **maximum final pressure = 210bar**
- **regulation step = 5bar**

"Binder"

Use the key **"TWINE-NET"** to choose the type of binder with which you wish to work:

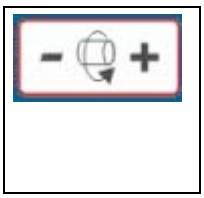
- **TWINE binder**
- **NET wrapper**

Pressing the key, the respective led of the binder selected will come on (binder active).

Press the **"AUTO"** key to choose whether to activate or deactivate the automatic start of binding:

- **AUTOMATIC binding = led on and flashing,**
- **MANUAL binding = led off.**

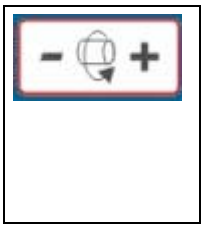
"Net turns"



If you have activated the NET wrapper, press the keys **"+"** and **"-"** to set the number of turns with which you wish to bind your bale with net in relation to the final diameter:

- **minimum number of turns of net = 1,6**
- **maximum number of turns of net = 5**
- **regulation step = 0,2 turn**

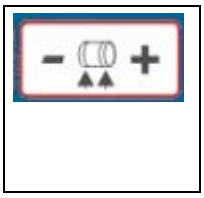
"Turns around the centre"



If you have activated the TWINE binder, press the keys **"+"** and **"-"**to set the number of turns around the centre with which you wish to bind your bale with twine in relation to the final diameter:

- **minimum n. of turns of twine = 4**
- **maximum number of turns of twine = 20**
- **regulation step = 1 turn**

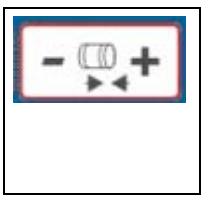
"Turns around the bale head"



Press the keys **"+"** and **"-"** to set the number of turns around the bale heads with which you wish to bind your bale with twine in relation to the final diameter:

- **minimum n. of turns around the bale heads = 1**
- **maximum n. of turns around the bale heads = 5**
- **regulation step = 0,5 turn**

"Distance from the head"



Press the keys **"+"** and **"-"**to set the distance at which you wish to bind the heads of your bale with twine in relation to the final diameter:

- **minimum distance from the bale head = 8cm**
- **maximum distance from the bale head = 18cm**
- **regulation step = 1cm**

10-QT.3.2_TWINE LOADING

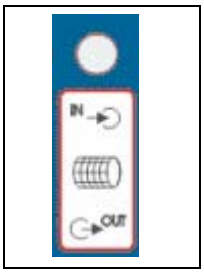
To load the twine correctly in the binder, see paragraph *"7.6.1_Twine loading".*

10-QT.3.3_NET LOADING

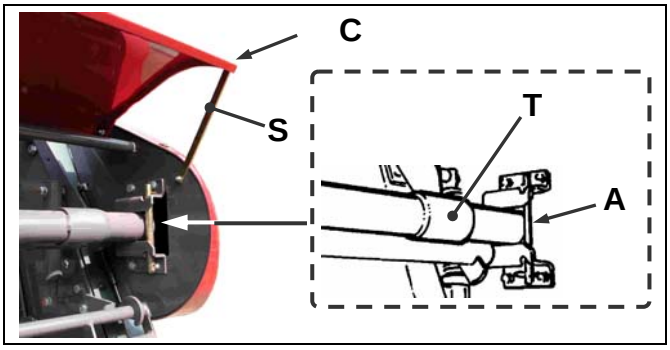
- The round baler can use spools from 2000 to 3000 metres.
- The hole inside the cardboard tube of the roll of net must be 75÷78mm
- For good performance of the binder we advise using a net of 14÷16 (g/m).

Before doing the operations given below, press the **"ON-OFF"** key to switch on the system.

Use the **"IN"** key, move the net arm inwardly (towards the belts), as far as the end stop, **the LED will become constantly red.**



- Lift the cover **"C"** and rest it on the support **"S"**.
- remove the pin **"A"** that secures the tube on which the roll of net is supported and make the tube **"T"** come out in order to insert the roll.
- Push the roll of net onto the roll-holding tube and reposition it in its housing, remembering to reposition the securing pin **"A"** removed previously.
- Lower the cover **"C"** again.

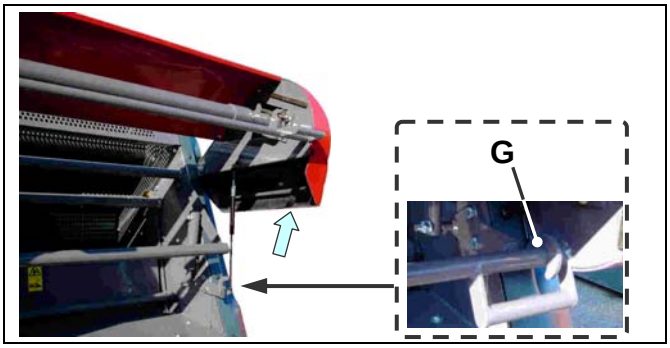


IMPORTANT!

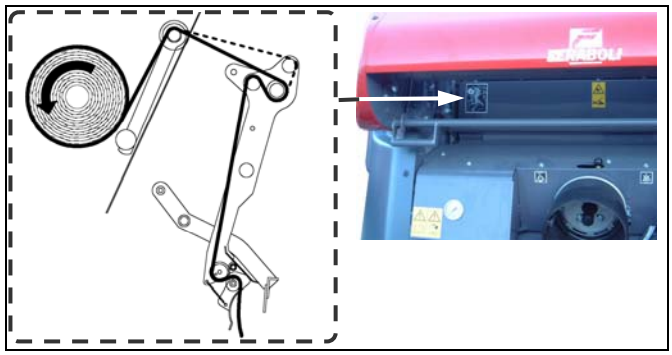
- **Take great care to push the net roll onto the tube correctly.**
- **Make sure that the direction of rotation of the net roll is the same as indicated by the decal.**

Use the key **"OUT"** to bring the net wrapper arm to an intermediate position so as to be able to insert the net into the grip.

- Unlatch the two safety hooks **"G"** and lift the entire net box.



- Pass the net over the rollers following the path shown by the decal located on the machine.
- Complete the insertion of the net in the lower part of the route and leave it dangling.



<u>IMPORTANT</u>! After positioning the net and before commencing work, bring the net wrapper to its original position using the control unit key "OUT".

- Press the **"AUTO"** key to return again with the NET wrapper set in AUTOMATIC mode, **the LED should be on.**

- Lower the net box again and re-latch the two safety hooks **"G"**.

<u>CAUTION</u>! Beware of the blade of the net wrapper when doing any work in its vicinity.

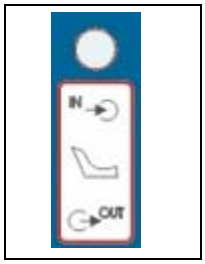
<u>IMPORTANT</u>! Make sure that the cutter has finished its movement (net wrapper in the original position at the end of its stroke).

10-QT.3.4_CUTTER DEVICE

In the event that your machine is provided with a **cutter device CUT** (model LTC), you can engage or disengage the knives.

<u>Press the key</u>:

- **"IN" = knives engaged, (LED on coloured orange)**
- **"OUT" = knives disengaged (LED off)**



<u>It is possible to engage or disengage the knives</u>:

Press the key **"ON-OFF"** and switch on the system.

<u>move the knives in</u>

Hold down the **"IN"** key to move the knives into the chamber (knives engaged), **the LED will become constantly orange.**

<u>move the knives out</u>

Hold down the **"OUT"** key to move the knives out of the chamber (knives disengaged), **the LED will be off.**

<u>The cutting length is 77mm</u>.

If you wish to cut a longer product it is necessary to remove some of the knives.

Further information regarding the adjustment, replacement and maintenance of the knives can be found in the paragraph *"9.9_Maintenance and adjustment of the cutter".*

10-QT.4_WORK PHASES

When the machine has been set up as described in chapter *"7_ Instructions for use"*, you can now start working.

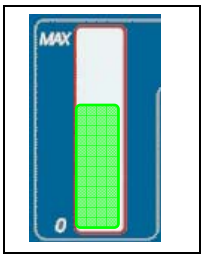
Press the **"ON-OFF"** key and switch on the system.

The machine status PILOT LIGHT is on and constantly green, and QuickTronic is ready to work with the settings you have programmed.
Take a position on the swathe; open the pick-up stop valve and lower it. Engage the PTO and start picking up.

"<u>Loading</u>"

Throughout the loading and bale formation phase inside the chamber, the machine status PILOT LIGHT remains constantly green.

During this phase the diameter BAR will show the state of product loading inside the chamber, lighting up progressively until the chamber is completely full which corresponds to the final bale diameter set in the program.



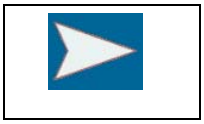
If your round baler is provided with the loading indicator kit, you can monitor the loading of the product inside the chamber

<u>Load the machine from the side of the arrow "on"</u>.

From the driving seat, during the stage of the loading product inside the bale chamber, look at the terminal in front of you and proceed with the tractor in order to load correctly the product inside the bale chamber:

<u>Arrow on, on the left side</u>:
this means that you must load the swan on the left side of the picking-up group (with the tractor you must therefore move on the right side).

<u>Arrow on, on the right side</u>:
this means that you must load the swan on the right side of the picking-up group (with the tractor you must therefore move on the left side).



<u>Both arrows on</u>:
this means that for a better loading of the swath inside the chamber you must advance with the tractor *"zigzagging"*.

<u>Both arrows off</u>:
this means that you are loading the machine in a correct way!
Go straight ahead with the tractor.

"Binding"

On reaching the bale diameter set in the program, the machine stops picking up and forming the bale inside the chamber.
The diameter bar will be completely illuminated and the machine status PILOT LIGHT will become constantly red.

You must now stop the tractor to do the binding (or wrapping) cycle.

Depending on the binding cycle settings you have entered in the work program, start binding the bale in the chamber.

When the binding is set to manual mode, the LED of the **"AUTO"** key is off.
QuickTronic will ask you to start the binding cycle manually.

- Push the key **"START-STOP"** to start binding the bale.

When the binding is set to automatic mode, the LED of the **"AUTO"** key is on and flashes.
The bale binding step starts automatically immediately after formation of the bale.

During the binding phase, depending on the type of binder in use (twine binder or net wrapper), you can display the following information in real time:

"NET wrapping"

The display will show the number of turns of the net wrapping in progress (starting from zero up to a value set in the program).

"TWINE binding"

The display shows:

- the number of turns of twine distributed on the bale head,
- the number of turns of twine being produced at the centre of the bale.

Throughout the bale binding phase (regardless of whether the binder or wrapper is being used) the machine status PILOT LIGHT will remain constantly red, while in the event of problems or errors during the cycle it will flash red.

"Bale ejection"

At the end of the binding and cutting cycle, the step in which the bale is ejected from the machine chamber starts.
The machine status PILOT LIGHT becomes constantly orange.

Throughout the phase of waiting for the tailgate to open and the bale to be ejected, the machine status PILOT LIGHT remains constantly orange.
If your machine has an electronically controlled bale ejector device, QuickTronic detects when the bale is blocked in the chamber and when the bale is resting on the ejector
In this case only the machine status pilot light will warn you of problems by flashing orange.

After the bale has been ejected, the machine status PILOT LIGHT flashes green and will remain so as long as the tailgate remains open.
When the tailgate has been closed completely, the machine status PILOT LIGHT will return to a constant green.

At this point the machine is ready to recommence a new work cycle.

10-QT.5_COUNTER

QuickTronic has three types of counter in use:

"TOTAL counter"

counts the number of bales independently of the type of binding.

"NET counter"

counts only the bales formed and wrapped with net.

"TWINE counter"

counts only the bales formed and tied with twine

Press the **"COUNTER"** key briefly to select and activate the type of counter desired.
Every time you press the key the display will show the type of counter in use in sequence:

- **no** letter **= TOTAL** counter
- letter **"n" = NET** counter
- letter **"t" = TWINE** counter

Hold down the **"COUNTER"** key for a few seconds to completely zero the counter in use.

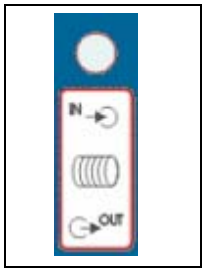
WARNING!: if you zero the TOTAL counter, the NET and TWINE counters will also be completely zeroed.

10-QT.6_MOTOR MANUAL

Using the "manual motors", QuickTronic allows the operator to control manually the travel of the actuators installed on the machine.

By pressing any of the keys **"TWINE", "NET"** or **"CUT"**, the system deactivates the AUTOMATIC work mode and switches over to MANUAL mode.
Press the key **"START-STOP"** to return to automatic work mode.

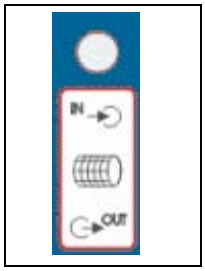
"TWINE actuator"



Keeping pressed the key **"IN"** move the twine binder arm into the chamber.
Use the key **"OUT"** to move the arm back to the rest position.

In the manual mode, the LED becomes constantly red when the arm of the twine binder has reached the end stop.

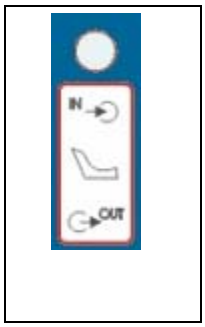
"NET actuator"



Keeping pressed the key **"IN"** move the net wrapper arm into the chamber.
Use the key **"OUT"** to move the arm back to the rest position.

In the manual mode, the LED becomes constantly red when the arm of the net wrapper has reached the end stop.

"CUT actuator"



This function allows you to modify the status of the knives of the cutter system:

- Keeping pressed the key **"IN"** move the knives into the chamber (cut system CUT = activated).
- Use the key **"OUT"** to move the knives out of the chamber to the rest position (cutter system CUT deactivated).

The LED comes on constantly orange when the CUT device is active.

10-QT.7_SETTINGS

10-QT.7.1_VOLUME BUZZER

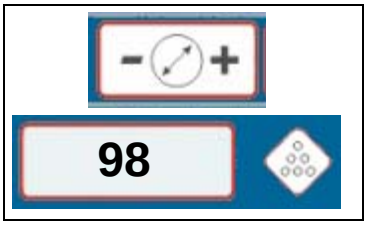
This is the buzzer sound volume and it has two types.

- **ALARM Volume** = this is the volume of the buzzer sound for the **main functions**.
- **AUXILIARY Volume** = this is the volume of the buzzer sound for the **auxiliary functions**.

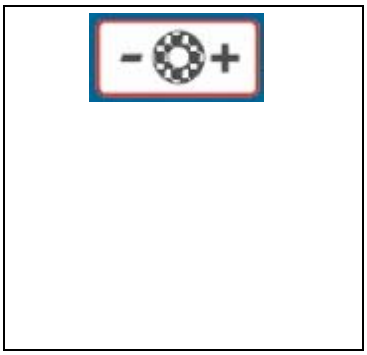
- **Turn on the system by pressing and holding down the "+" button** on the counter button.

- Wait until the counter display screen visualises the message **"PAR"**

- Then, using the **"-"** and **"+"** on the bale diameter button, select the code for the parameter of the type of volume that you wish to adjust:
- Code PAR = **"98" = ALARM Volume**
- Code PAR = **"99" = AUXILIARY Volume**



Use the symbols **"-"** e **"+"** on the pressure button to adjust the buzzer volume value:



ALARM Volume (code PAR = "98"):

- **Value = 5 = minimum volume**
- **Value = 10 = maximum volume**

AUXILIARY Volume (code PAR = "99"):

- **Value = 0 = volume excluded**
- **Value = 10 = maximum volume**

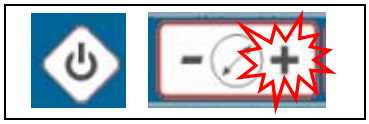
- Then press the ***"START-STOP"*** button to **confirm** the change.

- Press the ***"AUTO"*** button to **cancel** the change.

10-QT.7.2_DIAMETER SELF-LEARNING

For execution of this function, close the machine hatch and activate the PTO for a few seconds so as to bring the belts into tension.

- **Turn on the system by pressing and holding down the "+" button** on the bale diameter button.

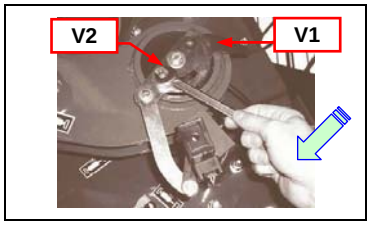


- The counter display will show the message **"SL B"**

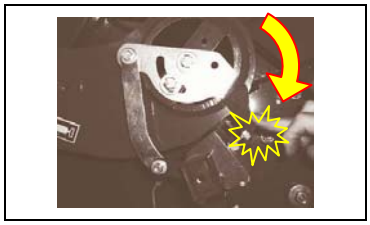
At this point you should execute the diameter self-learning procedure:

Procedure:

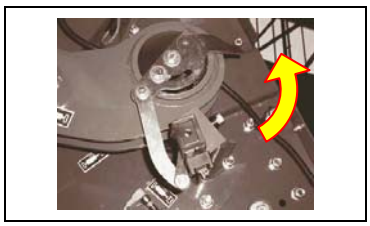
- Unscrew and remove the **V1** bolt located high with a 13 mm spanner,
- Then loosen the **V2** bolt shown in the spanner.



- Rotate the adjustment plate in a clockwise direction until it stops **against the adjustment bolt**.



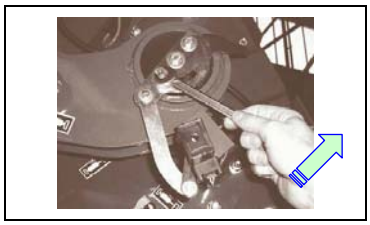
- Then rotate the adjustment plate in a anticlockwise direction until it returns to its original position.



- Confirm with the ***"START-STOP"*** button.

- The counter display will show the message **"DONE"**

- Tighten down the **V2** and **V1** bolts.

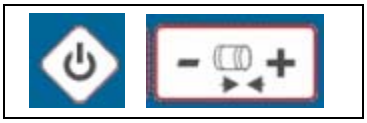


At the end of the procedure, turn off the system.

10-QT.7.3_TWINE SELF-LEARNING

To execute this function the tractor must be running.

- **Turn on the system by pressing and holding down the "+" button** on the twine edge distance button.



- The counter display will show the message **"SL T"**

- Then press the ***"START-STOP"*** button.
  The system will execute the twine self-learning procedure:

At the end of the procedure, turn off the system.

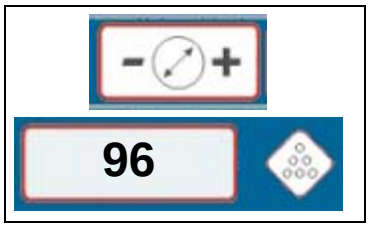
10-QT.7.4_TYING ARM START-UP DELAY

This function enables the adjustment of the start up of the twine or net wrap tying arm after the **"STOP"** signal for bale made. (STEADY RED warning lamp)

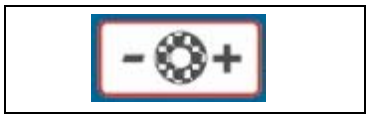
- **Turn on the system by pressing and holding down the counter button.**

- Wait until the counter display screen visualises the message **"PAR"**

- Then, using the **"-"** and **"+"** on the bale diameter button, select the code for the parameter of the type of start up delay for the tying arm that you wish to change:
- Code PAR = **"96" = TWINE status delay**
- Code PAR = **"97" = NET status delay**



Use the **"-"** e **"+"** symbols on the pressure button to adjust the tying arm delay:



TWINE status delay (code PAR = "96"):

- Use the ***"+"*** navigation button to **increase** the delay time for the start up of the tying arm.
- Use the ***"+"*** navigation button to **decrease and/or zero out** the delay time for the start up of the tying arm.
- **Adjustment steps = 0>1 seconds**
- Factory set default value **= *"0.1 seconds"***

NET status delay (code PAR = "97"):

- Use the ***"+"*** navigation button to **increase** the delay time for the start up of the tying arm.
- Use the ***"+"*** navigation button to **decrease and/or zero out** the delay time for the start up of the tying arm.
- **Adjustment steps = 0.1 seconds**
- Factory set default value **= *"0.1 seconds"***

- Then press the ***"START-STOP"*** button to **confirm** the change.

- Press the ***"AUTO"*** button to **cancel** the change.

10-QT.7_SETTING

10-QT.7.1_TWINE SELF-LEARNING

The execution of this function is reserved exclusively for your dealer!

10-QT.7.2_DIAMETER SELF-LEARNING

The execution of this function is reserved exclusively for your dealer!

10-QT.8_ALLARM

10-QT.8.1_MACHINE STATUS PILOT LIGHT

The machine status PILOT LIGHT will warn you of any problems that may arise during work by means of a constant or flashing light of various colours:

PILOT LIGHT colour	PILOT LIGHT status	cause
RED	FLASHING	Problems or errors during the binding phase.
RED	LOWER LED FLASHING	Lower left LED = tailgate left hook open. Lower right LED = tailgate right hook open. Lower LED = tailgate hooks open.
GREEN	FLASHING	Tailgate open.
ORANGE	FLASHING	Bale blocked or stationary on the ejector.
RED	FIXED	STOP signal (the bale is made).

10-QT.8.2_LED

The LEDs of the various keys will warn you of any problems that may arise during work by means of a constant or flashing light of various colours:

LED type	LED type	LED type	LED type
TWINE key	RED	FLASHING after the binding phase	Binder breakdown.
NET key	RED	FLASHING after the binding phase	Binder breakdown.
NET key	ORANGE	CONSTANT	Net arm in the rest position.

10-ET_“EASYTRONIC” TERMINAL

10-ET.1_INSTALLATION

Check that you have the following material available in the box provided with the machine:

1) Feeder cable.
2) Terminal.

10-ET.1.1_FEEDER CABLE

With the tractor switched off, disconnect the battery earth wire, then connect feeder cable to the terminals of the 12 V battery, connecting the red wire **(+)** to the positive and the black wire **(-)** to the negative pole.
Reconnect the earth wire

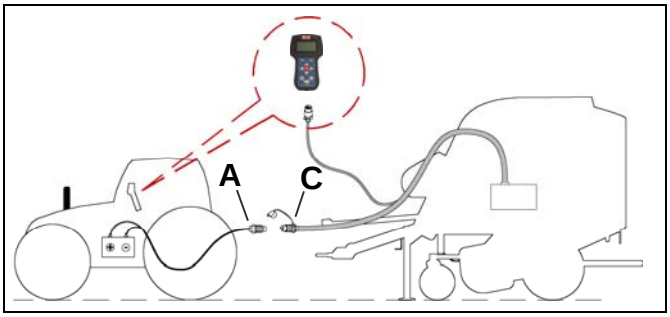
WARNING!: some feeder cables may be brown or blue. In this case the brown wire is the positive **(+)** and the blue wire is the negative **(-)**.

Secure the cable along the tractor so as to bring the COBO connector to the position most convenient for you but at the rear of the tractor nevertheless.

CAUTION!:

- Make sure not to invert the polarity.
- Tighten well the clamps that secure the power cable to the tractor batteries; otherwise there could be malfunctions.

Now connect the power cable **“C”** to the power cable **“A”** previously installed on the tractor.
Make sure that the tab of the cover of the female COBO connector of the power cable **“C”** is inserted in the slit of the of male COBO connector of the power cable **“A”**. This will prevent accidental disconnection of the two cables with consequent blackout of the system.



Position the terminal in the tractor cabin so that it can be reached easily by the operator.

10-ET.1.2_DATA TRANSMISSION CABLE

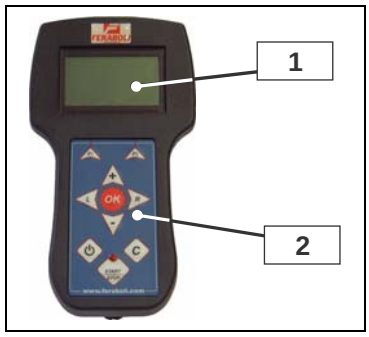
Connect the transmission cable provided with an eight pin connector to the control-box and secure it using the clamp of the ring nut.

WARNING!: check that the cables do not obstruct driving movements and are not near the moving parts.

Press the **"ON-OFF"** key on the terminal and check that it comes on!

10-ET.2_FUNCTIONS OF THE "EASYTRONIC"

10-ET.2.1_DESCRIPTION OF THE TERMINAL



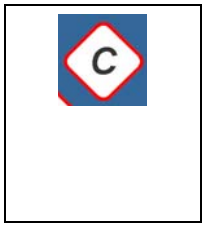
The terminal has:

1) **DISPLAY** on which the work steps, information and messages for the various functions of the machine are displayed.

2) **KEYS** to set and select the various functions.

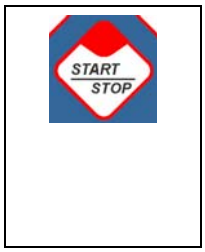
10-ET.2.2_FUNCTION OF THE KEYS

"ON-OFF"
Switches the system on and off.



"CANC"
Whenever the key is pressed, depending on the situation in which the program is found, can perform the following options:

- delete the data entered,
- annul the function requested,
- return "up" one level above the display being used.

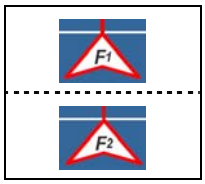


"START-STOP"

- Starts or stops the binding process.

The red pilot light is:

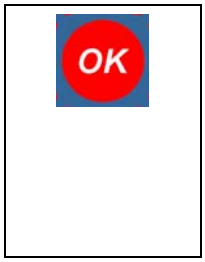
- off if the binding is in operator mode
- flashes if the binding is in automatic mode
- constantly on during binding.



Function/contextual keys:
Function "F1" and "F2"
These carry out the functions described in the 1st line displayed (at bottom right **"F2"** or left **"F1"**) in positions corresponding to the keys themselves.

Navigation keys:

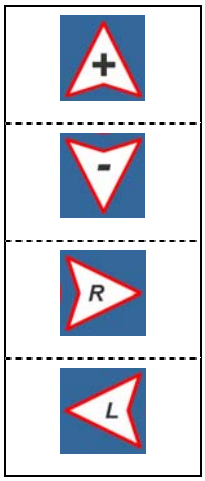
These are for moving the cursor within the screens and selecting the various icons and/or items in the menus:



"OK"

Whenever the key is pressed, depending on the situation in which the program is found, may perform the following options:

- confirm the data entered,
- confirm the selection (icon or menu items) selected on the display,
- confirm the variations made by the operator,
- access a menu.



UP "+"

- increases the numerical value of the data,
- moves the cursor upward

DOWN "-"

- decreases the numerical value of the data,
- moves the cursor downward.

RIGHT "R"

- scrolls the pages of a menu toward the right,
- moves the cursor to the right.

LEFT "L"

- scrolls the pages of a menu toward the left,
- moves the cursor to the left.

10-ET.3_SWITCHING ON FOR THE FIRST TIME

After connecting the machine to the tractor and connecting all the cables you can switch on for the first time.

- Press the **"ON-OFF"** key ed and wait for the data to load.

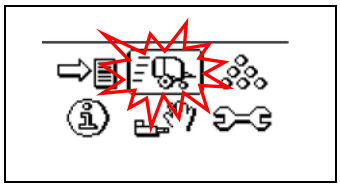
Only the first time the EasyTronic is switched on will it request selection of the working language.

- select the language desired using the navigation keys **"+" "-" "R" "L"** and confirm the choice by pressing the **"OK"**.

From now on EasyTronic will communicate with you in the language chosen and when switched on successively.

When data loading is completed the **"initial screen"** will be displayed and the cursor will be positioned on the **"work"** icon.

If the work icon does not flash (icon not selected), use the navigation keys **"+" "-" "R" "L"** to move to the work icon.



initial screen

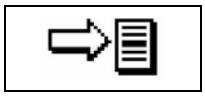
10-ET.4_MENÙ

In this paragraph the various menus that comprise the EasyTronic program and the operations of the various keys are described.

10-ET.4.1_PROGRAM MENÙ

WARNING! The items of the program menu are different and depend on which devices are installed on the machine.

Select the **"program"** icon and confirm with the **"OK"** key.

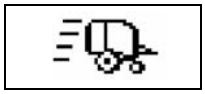


EasyTronic consists of a program with preset default values that can be changed by the operator.
In this menu it is possible to select the items below for display and/or modification (depending on the configuration of your machine):

Roundbaler model LT-LTR-LTC	**Roundbaler model BASIC**
• bale diameter, • soft core diameter, • soft core pressure, • final pressure, • bark.	• bale diameter, • soft core diameter,
• type of binder (only if both binders are installed: twine binder and net wrapper), • number of turns of the net (if it is mounted the net wrapping), if it is mounted the twine wrapping: • number of turns of the twine around the bale centre, • number of turns of twine around the heads of the bale, • distance of the twine from the head of the bale	

10-ET.4.2_WORK MENÙ

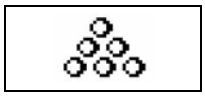
Select the **"work"** icon and confirm with the **"OK"** key.



In this menu EasyTronic communicates the various functions that the machine is currently performing during gathering of the product and manages the steps of gathering, binding and ejection of the bale.

10-ET.4.3_COUNTER MENÙ

Select the **"counter"** icon and confirm with the **"OK"** key.



In this menu it is possible to keep count of the bales produced by the machine.

- EasyTronic independently counts both the bales bound with net and those bound with twine.
- EasyTronic can also handle nine counters independently and an overall counter that produces the sum of all the other counters.

11B.4.4_MACHINE STATUS MENÙ

Select the **"machine status"** icon and confirm with the **"OK"** key.

Using this menu it is possible only to select and display information on the status of the machine.

This menu consists in turn of four other submenus:

- information
- alarms
- test machine
- check settings

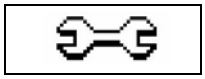
10-ET.4.5_MOTOR MANUAL MENÙ

Select the **"manual motor"** icon and confirm with the **"OK"** key.

Using the navigation keys ***"+" "-"*** EasyTronic allows the operator to control the travel of the actuators installed on the machine.

10-ET.4.6_SETTINGS MENÙ

Select the **"settings"** icon and confirm with the **"OK"** key.



Using this menu it is possible to select the main machine settings for display and/or modification:

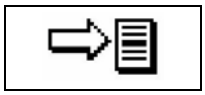
- general
- handset
- machine
- various

IMPORTANT! access to some of the settings of the "settings menu" requires a password to be entered.

10-ET.5_SETTINGS OF THE MENÙS

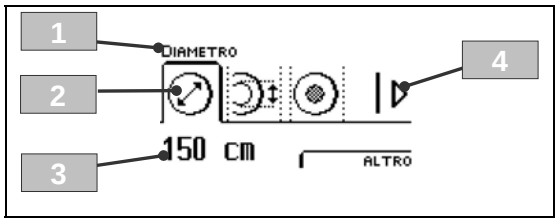
10-ET.5.1_PROGRAM MENÙ

From the **"initial screen"** use the navigation keys **"+" "-" "R" "L"** to select the **"program menu"** icon and confirm with the **"OK"** key.



All the data that can be read and/or modified by the operator appear on the display depending on the machine configuration:

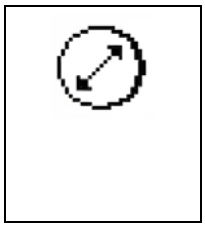
1) description of the icon,
2) icon,
3) value of the icon,
4) arrows for indication/shifting the menu icons.
These arrows indicate whether the menu consists of more icons not displayed because they are off the screen.



Use the navigation keys **"+" "-" "R" "L"** to move forward or back to display all the icons of the menu.

Using the navigation keys **"R" "L"** select the desired icon (the icon flashes) to see the value:

"bale diameter"
Use the navigation keys **"+" "-"** to set the final diameter value of the bale you wish to produce:



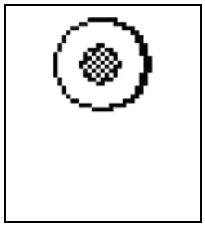
- **minimum diameter = 50cm**
- **maximum diameter = 165cm**
- **regulation step = 1cm**

"soft core diameter"
Use the navigation keys **"+" "-"** to set the value of the soft core diameter you wish to form inside your bale:

- **minimum soft core diameter = 56cm**
- **maximum soft core diameter = 70% compared to the Ø final of the bale (max. diameter allowed 110cm)**
- **regulation step = 1cm**

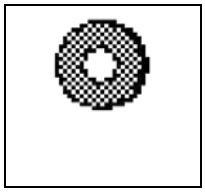
If you wish to produce bales with hard cores, you must keep the **"-"** key down until the wording **"OFF"** appears.
In this case the soft core will be deactivated automatically.

"soft core pressure" ***(only model LT-LTR-LTC)***
Use the navigation keys **"+" "-"** to set the value of the pressure inside the pre-chamber of your bale:



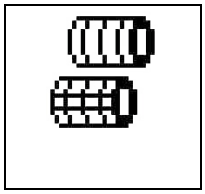
- **minimum soft core pressure = 30bar**
- **maximum soft core pressure = 150bar**
- **regulation step = 5bar**

"final pressure" ***(only model LT-LTR-LTC)***
Use the navigation keys **"+" "-"** to set the value of the final pressure of your bale (working pressure outside the soft core):



- **final pressure = 210bar**
- **regulation step = 5bar**

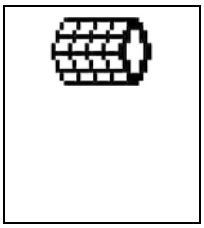
"binder"
Use the navigation keys ***"+" "-"*** to choose the type of binder with which you wish to work:



- **TWINE**
- **NET**

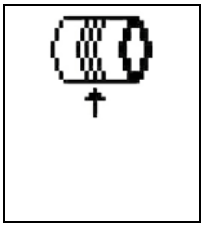
The binder activated is shown on the display.

“net turns”
Use the navigation keys **“+” “-”**to set the number of turns with which you wish to bind your bale with net in relation to the final diameter:



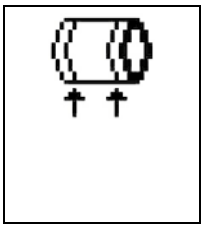
- **minimum number of turns of net = 1,6**
- **maximum number of turns of net = 5**
- **regulation step = 0,2 turn**

“turns around the bale head”
Use the navigation keys **“+” “-”** to set the number of turns around the centre with which you wish to bind your bale with twine in relation to the final diameter:



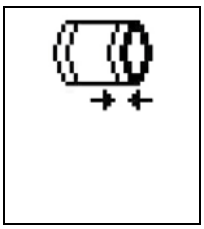
- **minimum number of turns of twine = 4**
- **maximum number. of turns of twine = 20**
- **regulation step = 1 turn**

“turns around the bale head”
Use the navigation keys **“+” “-”** to set the number of turns around the bale heads with which you wish to bind your bale with twine in relation to the final diameter:



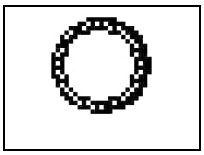
- **minimum number of turns around the bale heads = 1**
- **maximum number of turns around the bale heads = 5**
- **regulation step = 0,5 turn**

“distance from the head”
Use the navigation keys **“+” “-”** to set the distance at which you wish to bind the heads of your bale with twine in relation to the final diameter:



- **minimum distance from the bale head = 8cm**
- **maximum distance from the bale head = 18cm**
- **regulation step = 1cm**

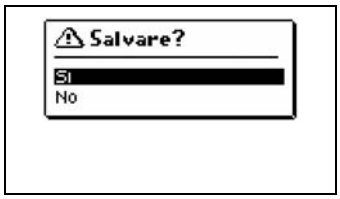
“bark” ***(only model LT-LTR-LTC)***
Use the navigation keys **“+” “-”** to activate **“ON”** or deactivate **“OFF”** this function.
If the function is active, the last cm of the bale diameter will be baled with the maximum working pressure of the machine.



It is possible to modify all or even just one of the values described in the **"program menu"**, or also to display them simply for reading.
After making any modification it is not necessary to confirm with the **"OK"** key each time but it is possible to navigate inside the menu using the navigation **"L" "R"** keys.

Only when you exit from the **"program menu"** (pressing the **"OK"** or **"CANC"** key), and only if you have made some modifications will EasyTronic asks you whether to save the data changed using **"YES"** or **"NO"**.

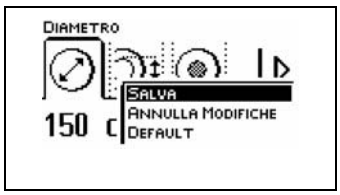
Use the navigation keys ***"+" "-"*** to activate the option you desire and confirm with the **"OK"** key.



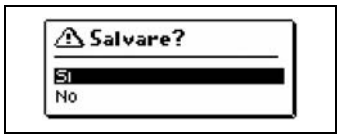
EasyTronic will return to the **"initial screen"**.

Note: If you exit from the **"program menu"** without making any modifications EasyTronic will return directly to the **"initial screen"**.

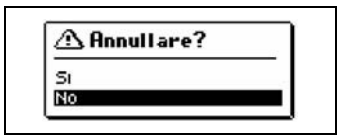
It is also possible to save the modified data inside the **"program menu"** by pressing the **"F2"** function key. In this case a new window opens in which you must choose one of the following operations
In this case a new window will open in which you have to choose one of the following options:



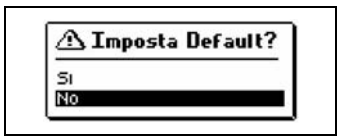
Save: save the modifications made by you.



Cancel modifications: cancels the modifications made by you.



Default: resets the data initially set the first time inside the **"program menu"**.

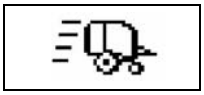


Use the navigation keys ***"+" "-"*** to activate the option you desire and confirm with the **"OK"** key.

Note: with this procedure you do not exit from the **"program menu"**.

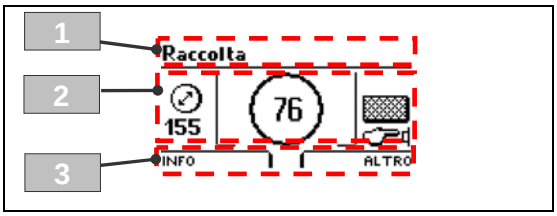
10-ET.5.2_WORK MENÙ

From the **"initial screen"** use the navigation keys ***"+" "-" "R" "L"*** to select the icon **"work menu"** and confirm with the **"OK"** key.



The screen of the **"work menu"** is divided basically into three sectors:

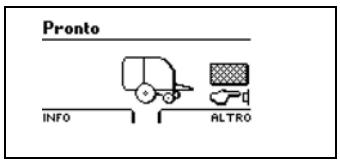
1) description of the work step currently being done by the machine
2) graphic display of the work step in progress (with or without data)
3) function key area, with which it is possible to interact using the two function keys **"F1"** and **"F2"**.



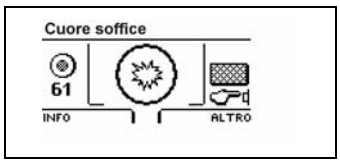
With the pick-up chamber empty, selecting the icon **"work menu"** EasyTronic will display the screen in which it will inform you that the machine is ready to start work.

For the 1st screen there are possibilities depending on the configuration of the machine's program:

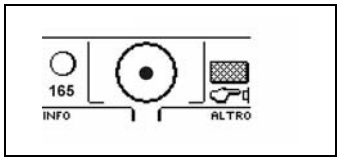
- **"Ready"** screen



- **"Soft core"** screen



- **"Hard core"** screen



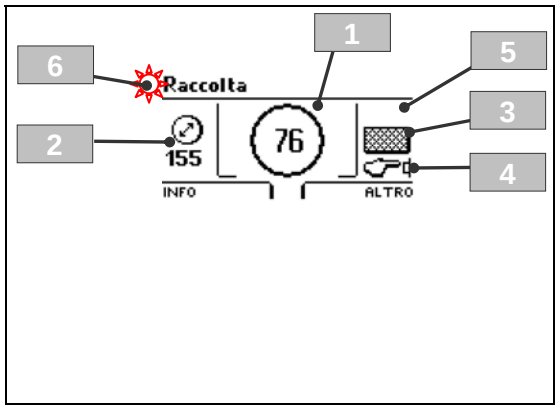
<u>IMPORTANT</u>! In both cases the machine is ready to start work.

While working other screens will appear on the display to inform you concerning the operations that the machine is doing at that moment:

- **"Picking-up" screen**

This screen tells you that the machine has started gathering the product and forming the bale inside the chamber.

All the data that can be read and/or modified by the operator appear on the display depending on the machine configuration:



1) actual value of the bale diameter that is in the process of being formed,
2) final value of the preset bale diameter you wish to obtain,
3) type of binder activated (in this example = net),
4) state of the binding:

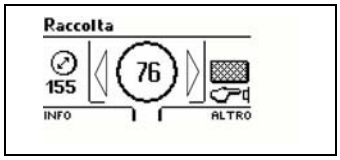
- manual = **"finger" icon** pushing a button
- automatic = wording **"AUTO"** (in this example = manual).

5) cutter unit:

- active = wording **"CUT"**
- deactivated = no wording and/or icon (in this example = deactivated).

6) alarm warning: the alarm warning icon (if comes out), indicates a problem.

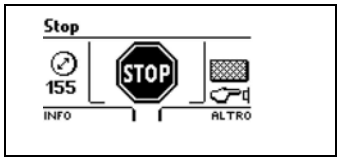
If your round baler is provided with the loading indicators optional kit and the function has been activated, you can monitor loading of the product into the chamber.
For further information see chapter *"10-ET.7_Work phases".*



- **"Stop" screen**

This screen tells you that on reaching the set bale diameter value the machine has finished gathering and bale formation inside the chamber.

In comparison with the picking-up screen, the **"STOP"** symbol appears on the display instead of the bale symbol.



Note: **You must now stop the tractor to do the binding (or wrapping) cycle.**

- **"Binding" screen**

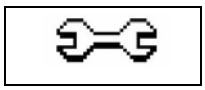
Depending on the binding cycle settings you have entered in the work program, start binding the bale in the chamber.

IMPORTANT! Whenever you switch on EasyTronic, the default binding mode is always "manual" (hand icon).

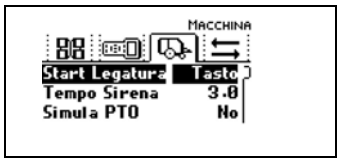
To change the binding mode from manual to automatic:

1st procedure:

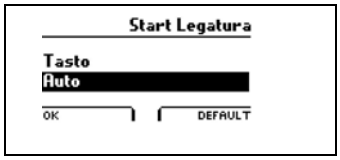
From the **"initial screen"** use the navigation keys **"+" "-" "R" "L"** to select the **"machine status menu"** icon and confirm with the **"OK"** key.



Using the **"R"** key scroll over to select the **"machine"** icon (in this case the **"Start binding"** function is already selected), and confirm with the **"OK"** key.



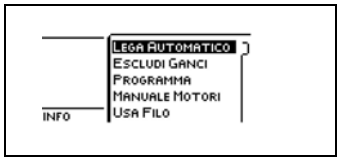
- Using the **"-"** key select the function **"Auto"** and confirm with the **"OK"** key.
- Press the **"CANC"** key to exit from the menu.



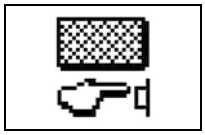
2nd procedure:

from the **"work menu"** press the **"F2"** key to access the submenu **"other"** (in this case the **"Automatic binding"** is already selected).

Confirm with the **"OK"** key.

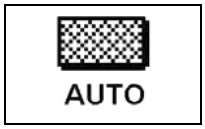


When the binding is set to **manual mode**, the **"manual"** icon can be seen on the display and EasyTronic will ask you to start the binding cycle manually.



- Press the **"START"** key to start binding the bale.

When the binding is set to automatic mode, the wording **"AUTO"** can be seen on the display and the bale binding step starts automatically immediately after formation of the bale.



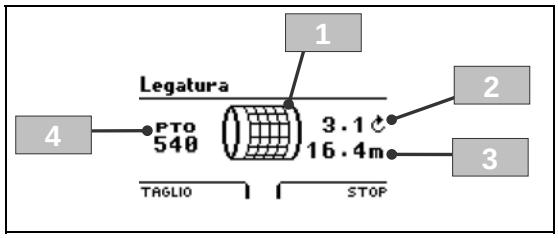
rapid change of the binding mode from manual to automatic:
Work Screen ---->> "F2" ---->> "Automatic binding" ---->> "OK"

There are two possible binding screens (according to the type of wrapping installed):

- ***"Net wrapping" screen***

All the data that can be read and/or modified by the operator appear on the display depending on the machine configuration:

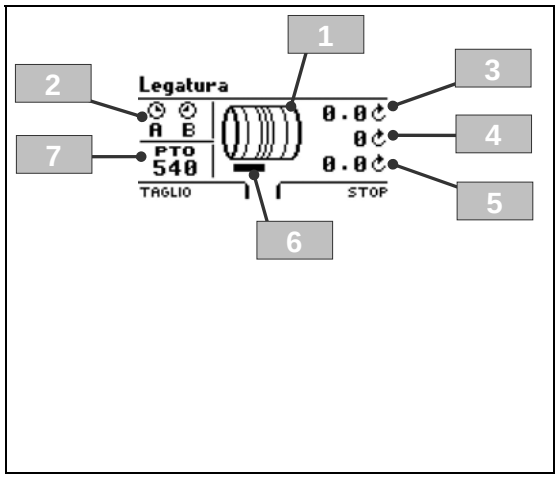
1) type of binding in use (in this example = net wrapping),
2) turns of net being done by the binder (starting from zero up to a value set in the program),
3) metres of net binding the bale in relation to the number of turns set,
4) rpm of the PTO.



- ***"Twine binding" screen***

All the data that can be read by the operator appear on the display depending on the machine configuration:

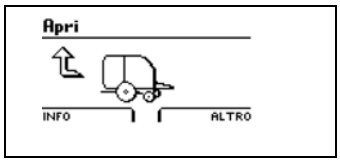
1) type of binding in use (in this example = twine binding),
2) pulleys.
If the pulleys do not turn, EasyTronic will warn you with an alarm message,
3) turns of twine being done by the binder on the right head of the bale,
4) turns of twine being done by the binder on the centre of the bale,
5) turns of twine being done by the binder on the left head of the bale (cutter side),
6) position of the twine binder arm in relation to the bale.
The black bar increases, from left to right (cutter side) in response to the movement of the arm,
7) rpm of the PTO.



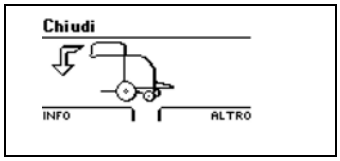
- ***"Bale ejection" screens***

At the end of the binding and cutting cycle, the step in which the bale is ejected from the machine chamber starts:

- with this screen, EasyTronic asks you to open the tailgate of the machine.



- open the tailgate to eject the bale from the round baler chamber and then, when the bale has been ejected, close it again following the instructions on the display.



If your machine has an electronically controlled bale ejector device, EasyTronic detects when the bale is blocked in the chamber and when the bale is resting on the ejector.

Note:
At this point the machine is ready to recommence a new work cycle.

In almost all the screens of the various steps of the work cycle it is possible to open the submenu using the two function keys:

“F1” = INFO

The submenu **"info"** displays the entire status of the machine.

Use the **“R”** key to scroll the pages forward and the **"CANC"** key to go back.

In some pages of the **"info menu"** the **"F2"** key allows you to modify the status or data of the function selected.

To exit from the info menu use the **"OK"** or **"CANC"** keys.

If you have made some modifications EasyTronic will ask you whether to save the data you have changed with **"YES"** or not with **"NO"**.

Use the navigation keys **“+” “-”** to activate the option desired and confirm with the **"OK"** key.

“F2” = OTHER

The **"other"** submenu allows you to modify the status of some machine functions directly.

Use the navigation keys **“+” “-”** to select the function desired and modify its status (activated or deactivated) and confirm with the **"OK"** key.

<u>IMPORTANT</u>! In this case EasyTronic accepts the modification without asking for confirmation.

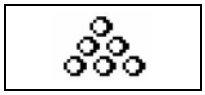
<u>Note</u>: if you are displaying only the settings and not making any modifications EasyTronic will exit automatically from the "info" and "other" menus after a certain default time.

Your machine may be provided with some optional supplementary functions.

In this case EasyTronic, during the various work steps, will also show information about these functions on the display.

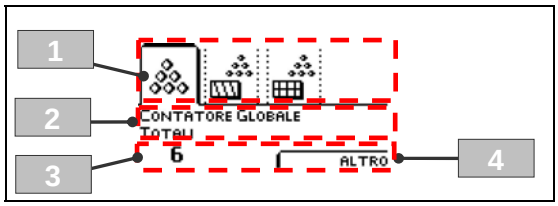
10-ET.5.3_COUNTER MENÙ

Using the navigation keys **“+” “-” “R” “L”** select the **“counter menu”** icon and confirm with the **"OK"** key.



The screen of the **"counter menu"** is divided basically into four sectors:

1) an icon that identifies the counter type,
2) a description of the counter in use (general or from 1 to 9),
3) total number of bales for the counter selected,
4) a function key area with which it is possible to zero the counters using the **"F2"** function key.



The **"F2"** function key may however also have other functions.

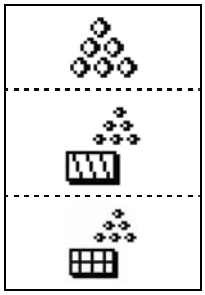
<u>EasyTronic has nine counters</u>:
the first counter of the list, the one normally selected on entering the counter menu is called the **"overall counter"**, the following are **"numbered counters"** with figures from 1 to 9

Each counter has sub-counters of three different types enclosed inside:

<u>TOTAL counter</u>:
counts the number of bales formed independently of the type of binding.

<u>TWINE counter</u>:
counts only the bales formed and tied with twine.

<u>TWINE counter</u>:
counts only the bales formed and tied with twine.



- Use the **“R” “L”** arrow keys to scroll between the sub-counters of the counter selected.
- Use the navigation keys **“+” “-“** to scroll between the **"overall counter"** and the **"numbered counters”**.

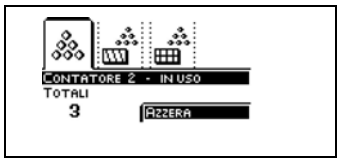
<u>To activate the count with one of the numbered counters</u>:

- using the navigation keys **“+” “-“** select the number of the counter desired and using the **"F2"** function key select the option **“Utilise”**
- Confirm with **“OK”**

The counter used will be displayed on a dark background and at the side the wording **"in use"** will appear.

<u>To zero the counters</u>:

Press the **"F2"** key and select the option **"Set to zero”**:



<u>WARNING</u>!: if you zero the "TOTAL overall counter", all the twine and net sub-counters in the programme are also zeroed.

- Confirm with **"OK"** if you really wish to zero the counter selected.

Press the **"F2"** key to zero the **"TWINE counter”**:

<u>WARNING</u>!: if you zero the "TWINE overall counter", all the nine numbered sub-counters present in the programme will also be zeroed.

- Confirm with **"OK"** if you really wish to zero the counter selected.

Press the **"F2"** key to zero the **"NET counter”**:

<u>WARNING</u>!: if you zero the "NET overall counter", all the nine numbered sub-counters present in the programme will also be zeroed.

- Confirm with **"OK"** if you really wish to zero the counter selected.

10-ET.5.4_MACHINE STATUS MENÙ

From the **"initial screen"** use the navigation keys **"+" "-" "R" "L"** to select the **"machine status menu"** icon and confirm with the **"OK"** key.

The screen of the **"machine status menu"** is divided basically into three sectors:

1) an icon,
2) a description of the icon,
3) the data that can be displayed.

Using the navigation keys **"R" "L"** select the icon and then, with the navigation keys **"+" "-"** select the item desired and confirm with **"OK"**.

It is possible to display different screens and to read the data described in the various lists:

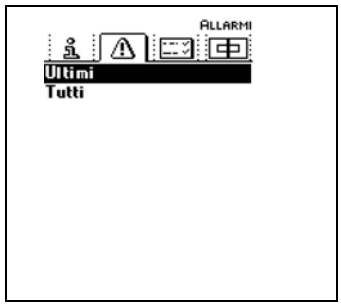
- ***"information"***

Work data: shows the total number of bales produced by your machine and the total hours of work of the machine.

Power supplies: shows the value of the working voltage of the devices installed on your machine.

To exit from the list press the **"CANC"** or **"F2"** key (**"exit"** function).

- ***"Alarm"***

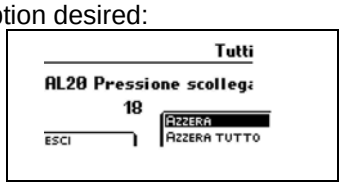


Latest: displays the list of the latest alarm signalled and memorised by the machine (type of alarm, date and time the alarm occurred).
Use the navigation key **"+" "-"** to scroll down the various alarm messages present in the list (a number will indicate the total of the messages present in the list; ex. 03/15: third message of a total of fifteen messages.

All: displays the entire list complete with the alarms managed by Easytronic.
On every page of this list the type of alarm and the number of times it has occurred, if any, are displayed.

From this screen it is possible to zero the number of times the alarm has occurred:

- press the **"F2"** function key and using the navigation keys **"+" "-"** select the option desired:

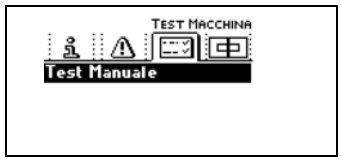


Set to zero = zeroes only the number of the alarm displayed.

Zero all = zeroes all the alarms in the **"All"** list.
Always confirm with **"OK"** if you really intend to zero the item selected.

To exit from the list press the **"CANC"** or **"F1"** key (**"exit"** function).

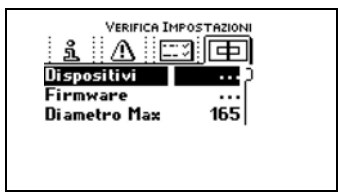
- ***"Test machine"***



This function checks the working order of the sensors, proximity switches and potentiometers installed on your machine.

To exit from the list press the **"CANC"** or **"F2"** key (**"exit"** function).

- ***"Check settings"***



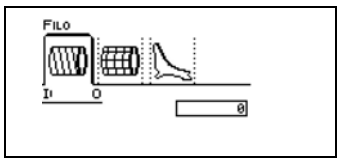
This function checks the settings of your machine set in the factory.
The items present in the list may vary depending on the configuration of your machine.
Use the navigation keys **"+" "-"** to select one of the items included in the list and then confirm with **"OK"**.

To exit from the list press the **"CANC"** or **"F1"** key (**"exit"** function).

10-ET.5.5_MOTOR MANUAL MENÙ

From the **"initial screen"** use the navigation keys **“+” “-” “R” “L”** to select the **“motor manual menu”** icon and confirm with the **"OK"** key.

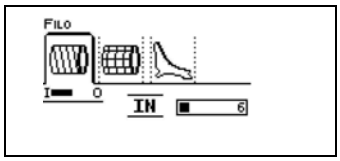
Using the **“motor manual menu”**, EasyTronic allows the operator to control manually the travel of the actuators installed on the machine (The icons that you see depend from the installed accessories).



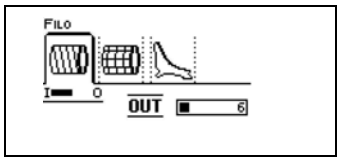
Using the navigation keys **“R” “L”** select the icon of the actuator desired:

- **“Twine”**

Keeping pressed the navigation key **“+”** move the twine binder arm into the chamber.

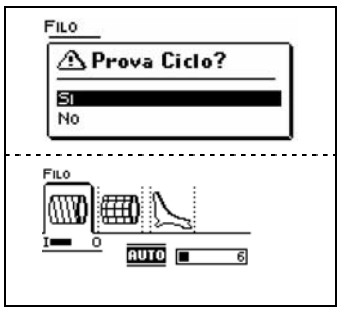


Use the navigation key **“-”** to move the arm back to the rest position.

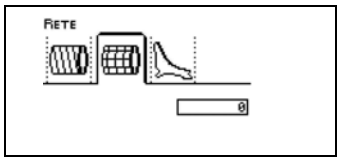


EasyTronic also allows you to simulate the binding cycle:

- press the **"START-STOP"** key.
- Using the navigation keys **“+” “-”** select the **"YES"** option and confirm with the **"OK"** key to start the simulation of the twine binding cycle.



- **“Net”**
- keeping pressed the navigation key **“+”** move the net wrapper arm into the chamber,
- use the navigation key **“-”** to move the arm back to the rest position.



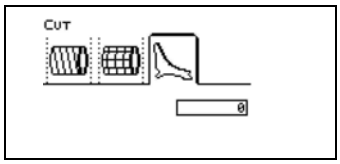
EasyTronic also allows you to simulate the wrapping cycle:

- press the **"START-STOP"** key.
- Using the navigation keys **“+” “-”** select the **"YES"** option and confirm with the **"OK"** key to start the simulation of the net wrapping cycle.

- **“Knives”**

This function allows you to modify the status of the knives of the cutter system:

- keeping pressed the navigation key **“+”** move the knives into the chamber (cut system CUT = activated),
- use the navigation key **“-”** to move the knives out of the chamber to the rest position (cutter system CUT deactivated).

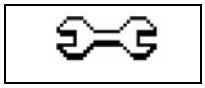


EasyTronic also allows you to simulate the work cycle with the cutter system CUT = active:

- press the **"START-STOP"** key.
- Using the navigation keys **“+” “-”** select the **"YES"** option and confirm with the **"OK"** key to start the simulation of the work cycle with the cutter system CUT active.

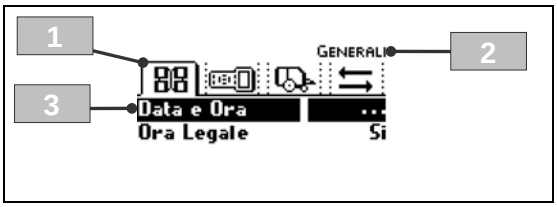
10-ET.5.6_SETTINGS MENÙ

From the **"initial screen"** use the navigation keys **"+" "-" "R" "L"** to select the **"motor manual menu"** icon and confirm with the **"OK"** key.



All the data that can be read and/or modified by the operator appear on the display depending on the machine configuration:

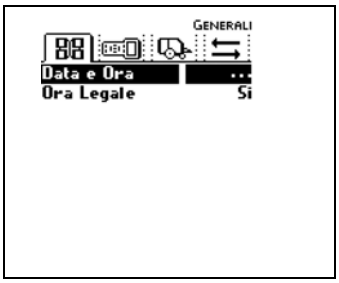
1) an icon,
2) a description of the icon,
3) data that can be displayed and/or modified.



Using the navigation keys **"R" "L"** select the icon and then, using the navigation keys **"+" "-"**, select the item desired and confirm with **"OK"**.

It is possible to display different screens and read the data described in the various lists:

- ***"General information"***



Date and time: use the navigation keys **"R" "L"** to select the parameter to be modified (hour/minutes/seconds - day/month/year) and then, using the navigation keys ***"+" "-"*** make the modifications desired.
Confirm with the **"OK"** or **"F1"** key (**"ok"** function).

Legal time: use the navigation keys ***"+" "-"*** to select the option desired (**"YES"** or **"NO"**).
Confirm your choice with the **"OK"** or **"F1"** key (**"ok"** function).

To exit without making any modifications from any of the items contained in the **"General information"** list, press the **"CANC"** or **"F2"** key (**"exit"** function).

- ***"Handset"***

Language: use the navigation keys **"R" "L"** to select the language desired and confirm with the **"OK"** or **"F1"** key (**"ok"** function).

Contrast: use the navigation keys ***"+" "-"*** to increase or decrease the contrast of the display and confirm your choice with the **"OK"** or **"F1"** key (**"ok"** function).

Tone keys: use the navigation keys ***"+" "-"*** to activate or remove the tones from the EasyTronic keys.
Confirm your choice with **"OK"** or **"F1"** key (**"ok"** function).

Alarm Volume
This is the buzzer sound volume for all of the principal functions.
Use the ***"+" "-"*** navigation buttons to adjust the buzzer volume value:

- **Value = 5 = minimum volume**
- **Value = 10 = maximum volume**

Confirm your choice by pushing one of the buttons, ***"C"***, ***"OK"***, ***"F1"*** (***"ok"*** function) or ***"F2"*** (***"Exit"*** function).

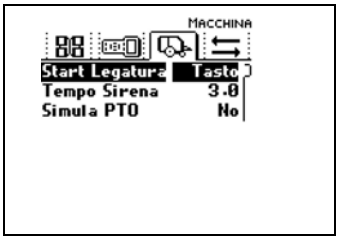
Auxiliary Volume
This is the buzzer sound volume for all of the auxiliary functions.
Use the ***"+" "-"*** navigation buttons to adjust the buzzer volume value:

- **Value = 0 = volume excluded**
- **Value = 10 = maximum volume**

Confirm your choice by pushing one of the buttons, ***"C"***, ***"OK"***, ***"F1"*** (***"ok"*** function) or ***"F2"*** (***"Exit"*** function).

To exit without making any modifications from any of the items contained in the **"Handset"** list, press the **"CANC"** key.

- ***"Machine"***



Start binding: use the navigation keys **"+" "-"** to select and change the binding mode from manual (wording **"Key"**) to automatic (wording **"Auto"**), or vice versa. Confirm your choice with **"OK"** or **"F1"** key (**"ok"** function).

Siren time: use the navigation keys **"+" "-"** to increase or decrease the time (expressed in seconds) of the acoustic signal of EasyTronic.
Confirm your choice with **"OK"** or **"F1"** key (**"ok"** function).

PTO simulation: if for any reason the cable or the sensor that measures the rpm of the PTO should break, it is possible to simulate this measurement temporarily:

- Use the navigation keys **"+" "-"** to activate **"YES"** or deactivate **"NO"** this option.

Confirm your choice with **"OK"** or **"F1"** key (**"ok"** function).

Note: The simulation will be activated at 540rpm.

IMPORTANT!: the function automatically deactivates whenever the EasyTronic is switched off.

Exclude hooks: also the two tailgate closure sensors, in the event of breakage, can be simulated by excluding their control:

- Use the navigation keys **"+" "-"** to activate **"YES"** or deactivate **"NO"** this option.

Confirm your choice with **"OK"** or **"F1"** key (**"ok"** function).

Note: When the hooks are excluded some functions are partially inhibited.

IMPORTANT!: the function automatically deactivates whenever the EasyTronic is switched off.

Activate ejector: this function allows activation of the ejector control during the bale ejection step:

- Use the navigation keys **"+" "-"** to activate **"YES"** or deactivate **"NO"** this option.

Confirm your choice with **"OK"** or **"F1"** key ("ok" function).

IMPORTANT!: If you remove the ejector from your machine (for example for working on hills), you must deactivate this function.

Deactivate diameter: when the DI potentiometer of bale max. diameter fails, you must disable it in order to be able to go on working.

- use the navigation keys **"+" "-"** to **deactivate** the DI potentiometer (select ***"YES"***).
- use the navigation key **"+" "-"** to **activate** the DI potentiometer (select ***"NO"***).

Always confirm your selection with ***"OK"***.

Diameter self-learning:

For execution of this function, close the machine hatch and activate the PTO for a few seconds so as to bring the belts into tension.

To execute this function the entry of the following password is required: **00001**

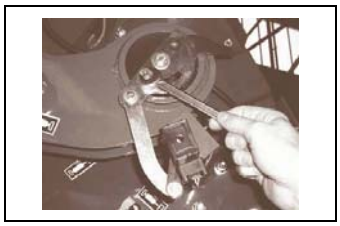
- Use the ***"R" "L"*** navigation buttons to move and select one of the numbers.
- Use the ***"+" "-"*** navigation buttons to change the value of the number selected:

Confirm the password with the ***"OK"*** button.

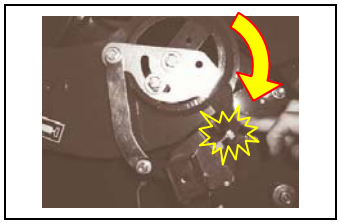
The message ***"Execute diameter self-learning procedure"*** will appear on the display.

Procedure:

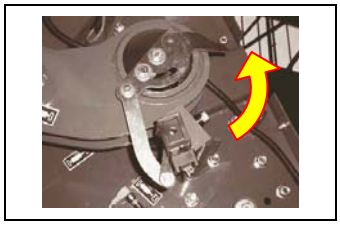
- Unscrew and remove the upper **V1** bolt with a 13 mm spanner,
- then loosen the **V2** bolt shown in the spanner.



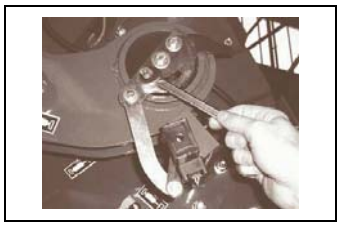
- Rotate the adjustment plate in a clockwise direction until it stops **against the adjustment bolt**.



- Then rotate the adjustment plate in a anticlockwise direction until it returns to its original position.
- Confirm with the **"OK"** button.



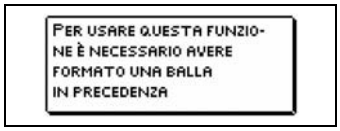
- Tighten down the **V2** and **V1** bolts.



Then, push the ***"C"*** button to exit the function and return to the "home screen".

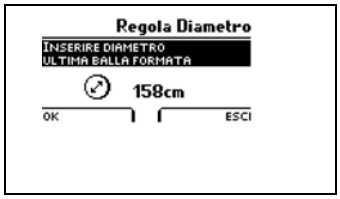
Diameter regulation: this function allows you to calibrate the final bale diameter you have set in the programme, with the real diameter of the bale produced during the formation process.

IMPORTANT!: o be able to carry out this operation you must produce at least one bale, otherwise EasyTronic will warn you with a message.



Note: We suggest you to make some bales with a diameter of **150mm**, and to measure later the real dimension of the obtained bale.

Use the navigation keys ***"+" "-"*** to decrease or increase the regulation value of the bale diameter.



example:
- final bale diameter set in the programme = 150mm
- bale diameter actually produced = 158mm
- therefore set the bale diameter regulation value to 158mm

Confirm with **"OK"** or **"F1"** key (**"ok"** function).

In this way EasyTronic will do the final bale diameter calibration automatically.

Spools: if the twine or one of the two sensors that control the twine should break, it is possible to simulate this detection temporarily:
- use the navigation keys ***"+" "-"*** to activate **"YES"** or deactivate **"NO"** this option.

Confirm with **"OK"** or **"F1"** key (**"ok"** function).

Twine self-learning:

To execute this function the tractor must be running.

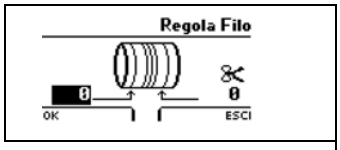
To execute this function the entry of the following password is required: **00001**
- Use the ***"R" "L"*** navigation buttons to move and select one of the numbers.
- Use the ***"+" "-"*** navigation buttons to change the value of the number selected:

Confirm the password with the ***"OK"*** button.

The message ***"Begin"*** will appear on the display.
- Use the ***"+" "-"*** navigation buttons to select **"YES"** and confirm with the **"OK"** button. Wait for the end of the twine self-learning cycle.

Then, push the ***"C"*** button to exit the function and return to the "home screen".

Twine regulation: this function allows you to regulate the shift of the twine on the bale heads.
- Using the navigation keys **"R" "L"** select the side of the bale where the correction is needed (the right cut side is indicated by an icon of scissors).

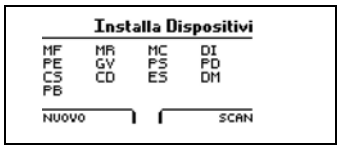


Then use the navigation keys:
- ***"-"*** = key to move the twine binder arm towards the sides (towards the outside of the bale),
- ***"+"*** = key to move the twine binder arm towards the centre of the bale,
- default value ***"0"*** to set/leave the factory-set twine setting.

Confirm your choice with **"OK"** or **"F1"** key (**"ok"** function).
Regulation step = about 1cm

Pressure calibration *(only model LT-LTR-LTC)*:
this function allows you to calibrate the final pressure of the bale (working pressure external to the pre-chamber) that you have set in the program with the actual final pressure of the bale produced during the formation process.
- Use the navigation keys ***"+" "-"*** to decrease or increase the calibration value of the bale pressure.

Install devices: depending on the configuration of your machine, this function allows you to check which devices are installed and correctly connected to the bus:



- press the function key **"F2"** (**"Scan"** function) to carry out the check.

When the scanning is over EasyTronic will display the devices detected on your machine.

IMPORTANT!: The installation of new devices "F1" ("New" function) is reserved exclusively for your dealer by means of the password!

Twine delay status: this function allows you to regulate the start of the twine binding arm after the bale completed **"STOP"** signal.

- Use the ***"+"*** navigation key to **increase** the delay time of the start of the binding arm.
- Use the ***"-"*** navigation key to **lower and/or reset** the delay time of the start of the binding arm.
- **regulation step = 0.1 seconds**
- factory-set default value = ***"0.1 seconds"***

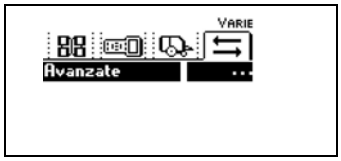
Net delay status: this function allows you to regulate the start of the net wrapping arm after the bale completed **"STOP"** signal.

- Use the ***"+"*** navigation key to **increase** the delay time of the start of the binding arm.
- Use the ***"-"*** navigation key to **lower and/or reset** the delay time of the start of the binding arm.
- **regulation step = 0.1 seconds**
- factory-set default value = ***"0.1 seconds"***

To exit without making any modifications from any of the items contained in the **"Machine"** list, press the **"CANC"** key.
In some cases it is also possible to exit from the items contained in the **"Machine"** list (without making modifications) using the **"F2"** function key.

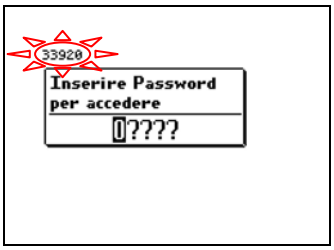
- ***"Various"***

Forward: this function acts directly on the settings of your machine.



IMPORTANT!: access to this function is allowed only by entering the password!

Restricted area to your dealer and to the **FERABOLI** Assistance Centre.



IMPORTANT!:

- **All the successive operations for resolving problems and modifying the machine's settings must be done in strict collaboration with our FERABOLI Assistance Service.**
- **Never carry out these operations alone.**

The company FERABOLI S.p.A. declines all responsibility for damage due to failure to observe these warnings.

10-ET.6_SETTING THE MACHINE UP FOR WORK

10-ET.6.1_TWINE LOADING

To load the twine in the twine binder correctly see paragraph *"7.6.1_Twine loading".*

10-ET.6.2_NET LOADING

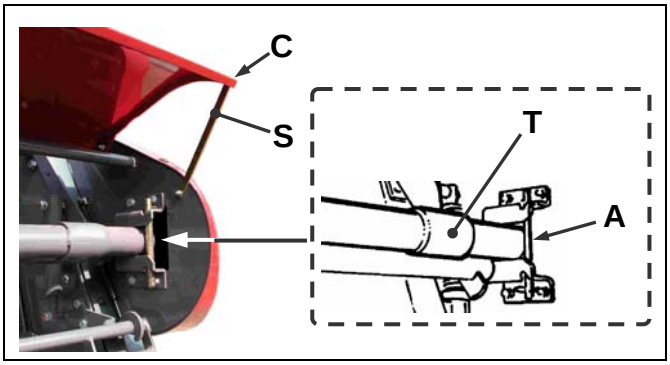
- The round baler can use spools from 2000 to 3000 metres.
- The hole inside the cardboard tube of the roll of net must be 75÷78mm.
- For good performance of the binder we advise using a net of 14÷16 (g/m).

Before doing any of the operations below press the ***"ON-OFF"*** key to switch on the system.

When the **"Initial screen"** appears, press the key **"-"** and select the icon **"motors"**; confirm with **"OK"**.

- With the key **"R"** select the NET wrapper.
- Use the key **"+"**, to move the net arm inwards (towards the belts), until you get a **"STOP"** signal.

- Lift the cover **"C"** and rest it on the support **"S"**.
- Remove the pin **"A"** that secures the tube on which the roll of net is supported and make the tube **"T"** come out in order to insert the roll.
- Push the roll of net onto the roll-holding tube and reposition it in its housing, remembering to reposition the securing pin **"A"** removed previously.
- Lower the cover **"C"** again.

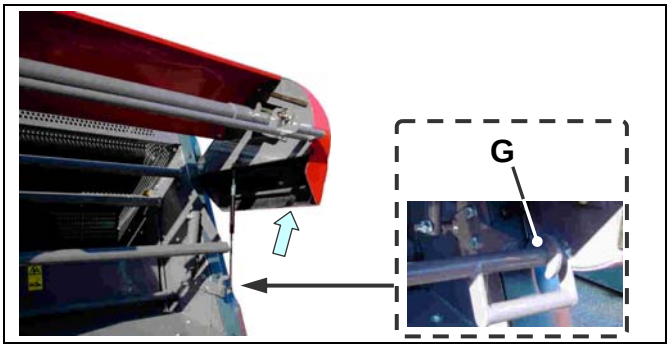


IMPORTANT!

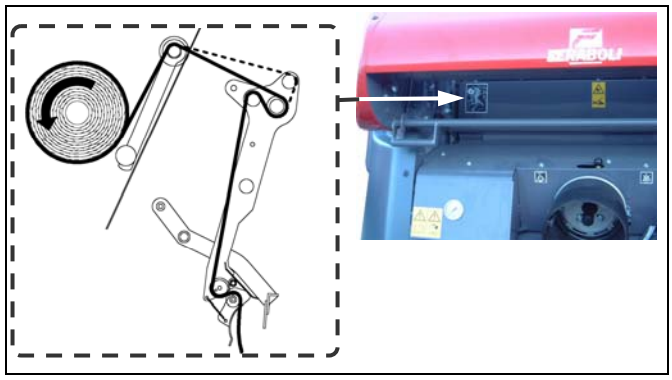
- **Take great care to push the net roll onto the tube correctly.**
- **Make sure that the direction of rotation of the net roll is the same as indicated by the decal.**

Use the key ***"-"*** to bring the net wrapper arm to an intermediate position so as to be able to insert the net into the grip.

- Unlatch the two safety hooks **"G"** and lift the entire net box.



- Pass the net over the rollers following the path shown by the decal located on the machine.
- Complete the insertion of the net in the lower part of the route and leave it dangling.



<u>IMPORTANT</u>! After positioning the net and before commencing work, bring the net wrapper to its original position using the control unit key *"-"*.

- Press the key ***"CANC"*** again to exit from the program.
- Lower the net box again and re-latch the two safety hooks "**G**".

<u>CAUTION</u>! Beware of the blade of the net wrapper when doing any work in its vicinity.

<u>IMPORTANT</u>! Make sure that the cutter has finished its movement (net wrapper in the original position at the end of its stroke).

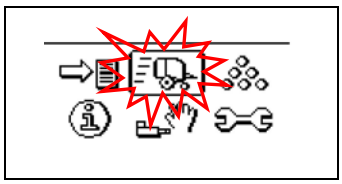
10-ET.6.3_CUTTER DEVICE

If your machine is provided with the **cutter device CUT** (mod.LTC), you can engage or disengage the knives.

<u>It is possible to engage or disengage the knives following two different procedures</u>:

Press the key **"ON-OFF"** and wait for the data to load

When the **"initial screen"** appears the **"work"** icon flashes.



<u>IMPORTANT</u>!: In the event that the work icon does not flash (icon not selected), use the navigation keys "+" "-" "R" "L" to move to the work icon.

<u>1st method</u>:
"<u>move the knives in</u>"

- Press the ***"OK"*** and ***"F2"*** keys to select the **"other"** menu and using the ***"-"*** key scroll down to select the item **"activate CUT"**; confirm with **"OK"**.
- Then wait for the knives to be moved in; the wording **"CUT"** will appear on the display.
- Visually check that the knives have been moved in (activated).

"<u>move the knives out</u>"

- Press the ***"OK"*** and ***"F2"*** to select the **"other"** menu and using the ***"-"*** key scroll down to select the item **"deactivate CUT"**; confirm with ***"OK"***.
- The knives will be moved out (deactivated) and the wording **"CUT"** will disappear from the display.

2nd method:
"move the knives in/out"

- Press the ***"OK"*** and ***"F1"*** keys to select the ***"info"***, menu and using the key ***"R"*** open the window that shows the status of the knives (activated or deactivated).
- Using the ***"F2"*** key change the status of the knives and confirm with ***"OK"***.
- If the knives **are moved in** (activated) the wording ***"CUT"*** will appear on the display (however, check that the knives are moved in visually).
- If the knives **are moved out** (deactivated) the wording **"CUT"** will disappear.

If something should not work correctly the wording "CUT CYCLE ERROR"; will appear. In this case consult the paragraph *"12_Problems and causes"*.

The cutting length is 7mm

If you wish to cut a longer product it is necessary to remove some of the knives.

Further information regarding the adjustment, replacement and maintenance of the knives can be found in the paragraph *"9.9_Maintenance and adjustment of the cutter".*

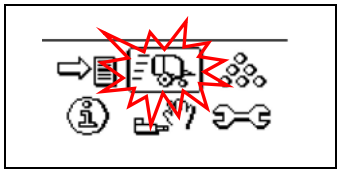
10A.7_WORK PHASES

When the machine has been set up as described in chapter *"7_Instructions for use"*, you can now start working.

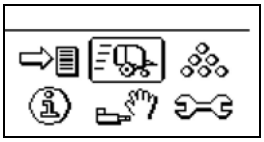
Press the **"ON-OFF"** key to switch on the system.

EasyTronic will load the data and then the **"initial screen"**.

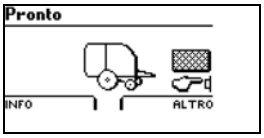
In the event that the work icon does not flash (icon not selected), use the navigation keys **"+" "-" "R" "L"** to move to the work icon.



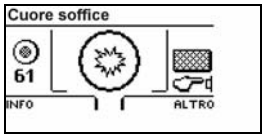
In order to start work, depending on the configuration of your machine, the EasyTronic display must show one of the following screens:



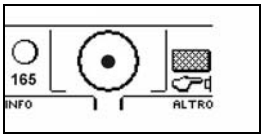
"initial screen"



"ready"



"soft core"



"hard core"

Take a position on the swathe; open the pick-up stop valve and lower it, engage the PTO and start picking up.

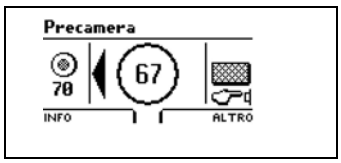
"<u>Loading</u>"

If your baler is equipped with the optional loading sensor kit, and the function has been activated, you can monitor the loading of the product inside the chamber.

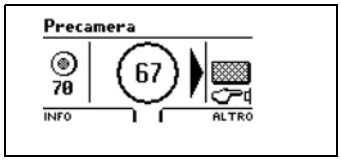
Load the machine from the side of the "on" arrow (black arrow displayed on the work screen).

From the driving seat, during the stage of the loading product inside the bale chamber, look at the EasyTronic display in front of you, according to the indications given by the arrows you see on the working screen, proceed with the tractor in order to load correctly the product inside the bale chamber.

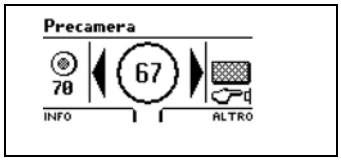
<u>arrow lit up on the left side</u>:
this arrow indicates that you must load the swathe on the left side of the pick-up assembly (so move the tractor towards the right).



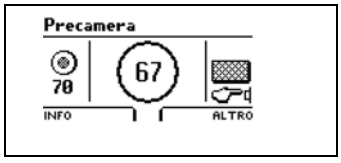
<u>arrow lit up on the right side</u>:
this arrow indicates that you must load the swathe on the right side of the pick-up assembly (so move the tractor towards the left).



<u>both arrows lit up</u>:
this indicates that for the best loading of the swathe into the chamber you must drive the tractor forward zigzagging.



<u>no arrows</u>:
You are loading the swathe correctly, continue driving the tractor straight forward.



"Formation of the bale"

Using the EasyTronic you can follow all the various phases in the formation of the bale.

When the main rocker arm starts to move, the **"work screen"** of EasyTronic shows you the value of the diameter increase of the bale corresponding to the real value of the diameter obtained.

On the **"work screen"** you can also monitor:

- diameter that you have set (actual diameter of the bale desired)
- type of binding (or wrapping) active,
- the binding method.

For further information on the bale formation display screens see chapter *"10-ET.5.2_Work menu"*.

If your machine is provided with a cutter system (mod.LTC):

- state of the knives (on or off).

During work, there are other screens appearing on the display that inform you concerning the operations the machine is carrying out at that moment.

EasyTronic will warn you, by an intermittent acoustic signal (which cannot be deactivated), that the bale is almost finished and that you are therefore approaching the diameter value that you set previously.

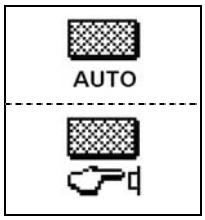
When the desired diameter is reached the **"STOP"** signal will appear on the display accompanied by a continuous acoustic signal (which cannot be deactivated).

This signal indicates that **you must immediately stop** the tractor so that the binder can tie the bale.

"Binding"

EasyTronic can start and carry out the binding process at the end of each bale formation automatically or in operator mode:

Automatic binding:
When the **"STOP"** signal appears the binder starts the binding process autonomously.



Binding in manual mode:
When the **"STOP"** signal is produced, press the **"START-STOP"** key to start the binding cycle.

From the work screen it is possible to switch from the manual to the automatic mode, and vice versa, simply by pressing the keys ***"F2" --->> "Automatic binding" --->> "OK"***

"Binding with TWINE"

When the **"STOP"** signal appears the tractor must be stopped and the PTO maintained at a speed of no less than 350rpm.
If the speed of the PTO drops below the required value, a fast intermittent acoustic signal will warn you of the problem.

The arm of the binder will move into the chamber positioning itself at the distance set in the program for binding the right end of the bale with the number of turns set in the program.
It then reverses the direction of motion, returns to the rest position binding the central part of the bale.
Then it stops to tie the left end of the bale and returning to the rest position activates the twine cutting system.

If for some reason the twine is not taken by the bale or if it should get blocked during the binding process, EasyTronic will warn you by means of an acoustic signal and a visual warning on the display.
The binding process will in any case continue to the end.

The binding process can be restarted by pressing the key **"START-STOP"** again.

If both twines should break or get blocked, the binding process will be interrupted automatically and the arm of the binder will stop. The wording **"Incorrect bale binding"** will appear on the display.

If during the product pick-up operation the twine should be taken, EasyTronic will give a warning with flashing alarm screens on the display.

"NET wrapping"

When the **"STOP"** signal appears the tractor must be stopped and the PTO maintained at a speed of no less than 350rpm but not above 500rpm.
If the speed of the PTO drops below the required value, a fast intermittent acoustic signal will warn you of the problem.

The wrapper arm will advance towards the chamber and return to a stand-by position to wait for the unwinding of the metres of net necessary for completing the number of binding turns set in the program. It will then return to the rest position after activating the net cutting.

If for some reason the bale should not take the net or if the net should break during wrapping, EasyTronic will warn you by means of an acoustic signal and a visual warning on the display.
The wrapping process will be interrupted automatically and the arm of the binder will return to the rest position.

If during the product pick-up operation the net should be taken, EasyTronic will give a warning with flashing alarm screens on the display.

EasyTronic will allow you to monitor the all the phases of both processes (twine binding or net wrapping) directly on the display.

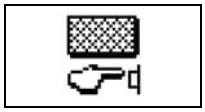
If during the product pick-up operation the twine or net should be taken, EasyTronic will give a warning with flashing alarm screens on the display.

For further information on the binding screens, consult chapter *"10-ET.5.2_Work menu"*.

You can restart the binding process pressing the key **"START-STOP"**; a new binding cycle will begin with the same type of material (twine or net) and the same settings as those used before.

It is possible to change the binder, without modifying the program using the keys:
"work screen" --->> "F2" --->> "select binder" --->> "OK"

<u>IMPORTANT</u>! whenever you switch off and switch on EasyTronic, the default binding mode will always be set to "manual" (icon of the hand).



With any diameter and whenever you wish, it is possible to tie the bale by pressing the **"START-STOP"** key.

"<u>Bale ejection</u>"

After binding, EasyTronic will tell you on the display to open the tailgate in order to eject the bale on the ground.

<u>WARNING</u>! Before opening the tailgate:
- **Make sure that you are on flat ground or in a suitable position if the ground is sloping.**
- **Keep any persons away from the machine and especially from behind the tailgate.**

Operate the lever of the hydraulic switch located on the tractor to open the tailgate; wait for the bale to be ejected then re-close the tailgate.

The **"initial screen"** will reappear on the display; this means that the machine is ready to perform another work cycle.

If the tailgate should not shut normally, EasyTronic will warn you of the problem by means of a visual signal on the display indicating the side or sides that are open.

<u>IMPORTANT</u>! Never begin collection with the tailgate open or even just one hook open.

If your round baler is provided with an electronically controlled bale ejector device and this function has been activated, EasyTronic will allow you to monitor directly on the display all the steps of:
- opening the tailgate
- ejecting the bale
- closing the tailgate
- the bale could be locked in the chamber
- the bale could be locked and still on the ejector

If on the other hand your round baler is <u>not</u> provided with an electronically controlled bale ejector device, or the function has <u>not</u> been activated, the open time of the tailgate is determined autonomously by the EasyTronic; once the bale has been ejected, EasyTronic will leave the tailgate open and wait for you to close the tailgate hydraulically.

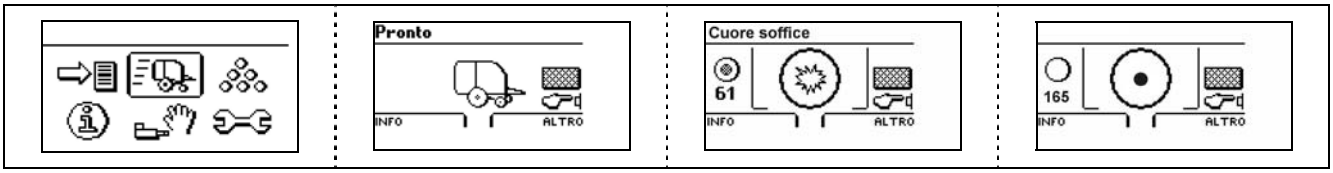
10-ET.8_ABBREVIATIONS

Depending on the devices installed on your machine, some of the screens produced by EasyTronic contain the following abbreviations:

Roundbaler model LT-LTR-LTC	**Roundbaler model BASIC**
"CD" = load right	"CD" = load right
"CS" = load left	"CS" = load left
"DI" = diameter potentiometer	"DI" = diameter potentiometer
"ES" = ejector unit	"ES" = ejector unit
"GV" = variable geometry module	"GV" = soft core module
"MC" = CUT module	"MC" = CUT module
"MF" = TWINE module	"MF" = TWINE module
"MR" = NET module	"MR" = NET module
"PB" = POWER BOX	"PB" = POWER BOX
"PD" = right tailgate closure hook	"PD" = right tailgate closure hook
"PE" = pressure module	"PS" = left tailgate closure hook
"PS" = left tailgate closure hook	"PT" = PTO module
"PT" = PTO module	"DM" = maximum chamber
"DM" = maximum chamber	

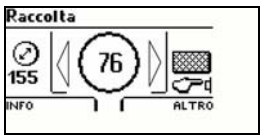
A WORKING CYCLE

1) READY AND WORKING START

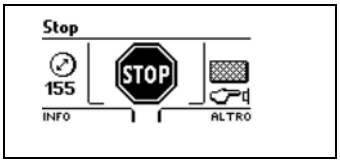


soft core *hard core*

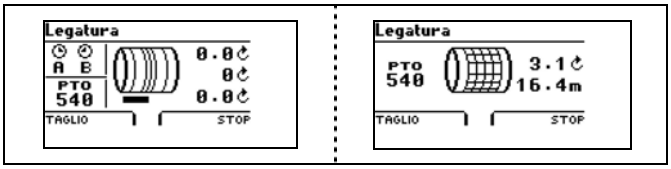
2) DURING THE CYCLE



3) STOP

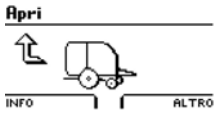


4) WRAPPING IN OPERATION

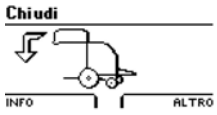


Twine *Net*

5) BALE RADY FOR EJECTION



6) CLOSE



11_TABLES AND DIAGRAMS

11.1_TYPES OF OIL AND GREASE

USE	TYPE
PTO deviation box	AGIP BLASIA EP 150
Greasing points	AGIP GR MU EP0
Tank for chain automatic oiling	AGIP OSO 100
Manual lubrication of chains	Mixture of oil and grease

11.2_LUBRICATION

All the operations described below **must** be done at the beginning and end of each season.
When lubricating always respect the regulations contained in the chapter *"9_Maintenance and adjustment".*

OPERATIONS TO BE DONE	DAYS	MONTHS
Grease all points provided for by decal 7500214.	**10**	
Grease hinges of tailgate.	**2**	
Grease pins of jacks.	**2**	
Grease belt-tightening arm.	**2**	
Grease connecting rod of the feeder (mod.LT).	**2**	
Grease the rotor support, on right side (mod.LTR and LTC).	**2**	
Grease track of cams of pick-up unit.		**1**
Grease cardan shaft.	*	**12**
Replace oil of deviation box.		**12**
Manually lubricate transmission chains of pick-up unit.	**1**	

(*) For further information on the maintenance of the cardan shaft consult the instructions contained in the booklet provided together with the cardan shaft.

11.3_MAINTENANCE WORK

All the operations described below **must** be done at the beginning and end of each season.
When doing maintenance work always respect the regulations contained in the chapter *"9_Maintenance and adjustment".*

OPERATIONS TO BE DONE	DAYS	MONTHS	BALE
Check the condition of the supports, bearings, pins and shafts.	**7**		
Check the tension of the chains.	**3**		
Check the bearings of the roll-holder and the bushings of the spring bearing bar of the reel-holder.	**7**		
Check the cams and the collection tines of the pick-up.		**1**	
Check the securing screws of the rollers of the belt stretcher arm.	**7**		
Check the belts and the belt clinching.		**1**	
Check the pressure of the tyres.		**1**	
Check that the jacks, hydraulic tubes and fittings do not have any oil leaks.	**7**		
Check the oil level in the deviation box.		**1**	**1000**
Check the oil filter of the automatic oiling system.		**12**	
Check and sharpen the knives (mod.LTC)			**300**
Check that the electrical light system works for road transport.	**1**		
Check the cables and sensors.		**6**	
Check if bolts and screws are correctly tightened.		**1**	
Check the welds.		**12**	
Check the condition of the adhesive safety signs (pictograms).		**1**	
Check the condition of all the protection guards and safety measures.		**1**	

- Grease and lubricate in accordance with the times described in the table *"11.2_Maintenance and adjustment".*
- At the beginning and end of each season always give your round baler a complete and thorough cleaning.

11.4_TORQUE SETTINGS

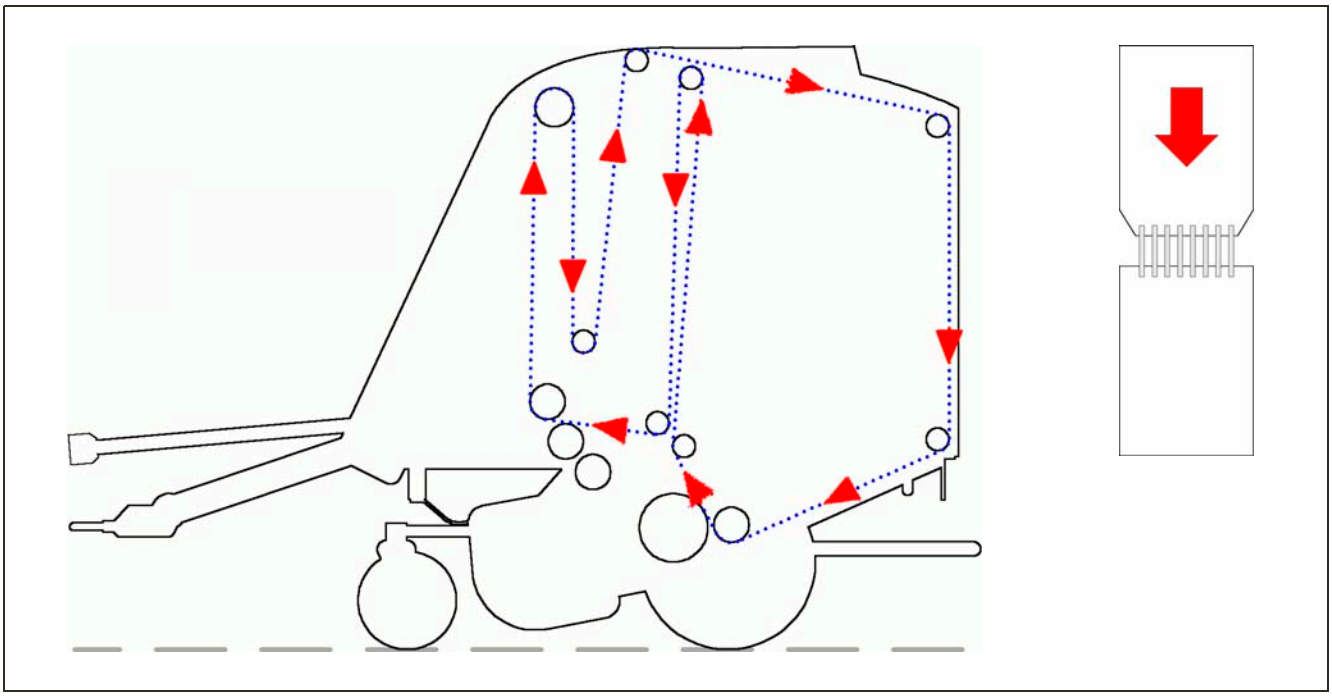
	R = 8.8		R=10.9		R=12.9			
	Nm	ft-lb	Nm	ft-lb	Nm	ft-lb	mm	inch
M3	1,3	(11,5)-*	1,8	(16)*	2,1	(18,6)*	6	1/4
M4	2,9	(25,5)*	4,1	(36,5)*	4,9	(43,5)*	8	5/16
M5	5,7	(50,5)*	8,1	(71,5)*	9,7	(86)*	9	23/24
M6	9,9	7,3	14	10,3	17	12,5	10	13/22
M8	24	17,7	34	25	41	30,3	13	9/16
M10	48	35,4	68	50,2	81	59,8	17	11/16
M12	85	62,7	120	88,6	145	107	19	3/4
M14	135	99,6	190	140	225	166	22	7/8
M16	210	155	290	214	350	258	24	121/128
M18	290	214	400	295	480	354	27	1.9/128
M20	400	295	570	421	680	502	30	1.3/16
M22	550	406	770	568	920	679	32	1.17/64

N.B. Values in brackets are expressed: **in-lb**

11.5_TYRE PRESSURE VALUES

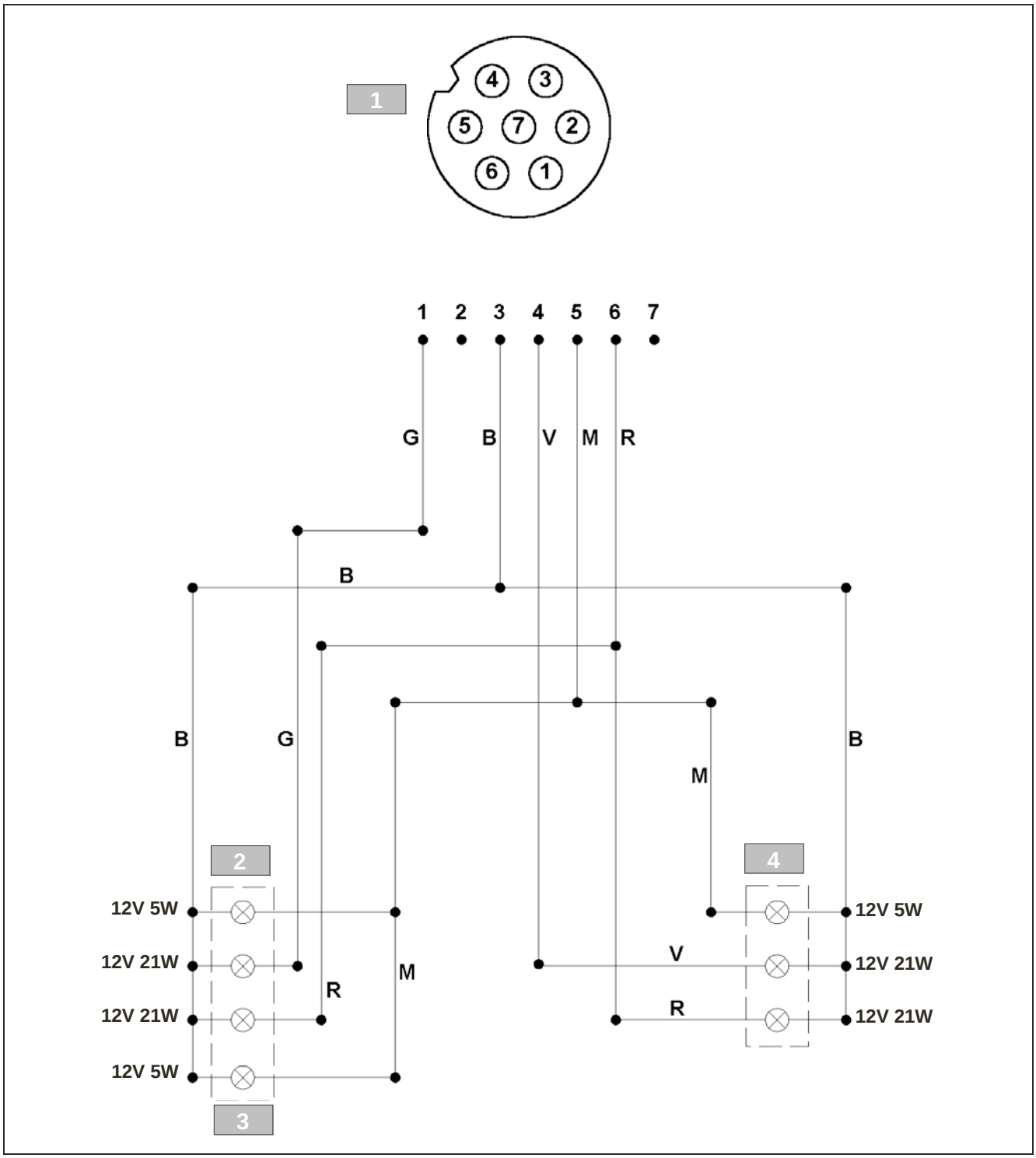
TYRE	bar
400/60-15.5	3,15
15.0/55-17	3,7
11.5/80-15.3	3,4
19.0/45-17	4

11.6_BELTS PATHS



Note: the arrows indicate the direction of rotation of the belts.

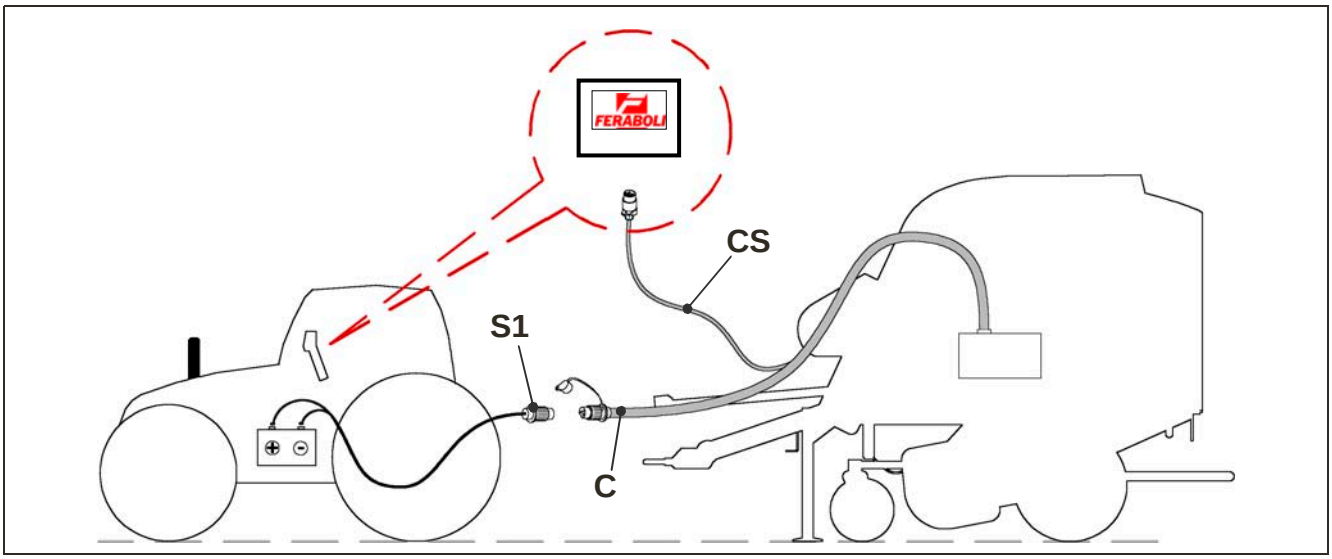
11.7_DRIVING LIGHTS ELECTRICAL SYSTEM



1) 7 pole plug
2) Right rear lamp
3) Number plate light
4) Rear left lamp

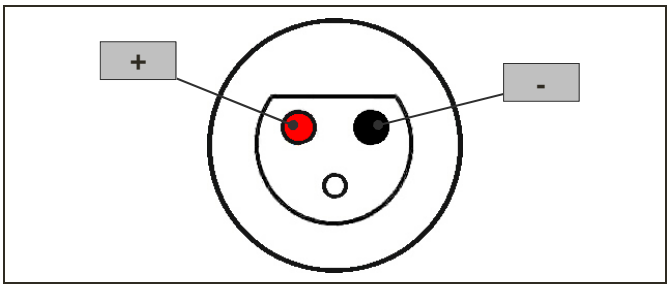
"G" = YELLOW
"B" = WHITE
"V" = GREEN
"M" = BROWN
"R" = RED

11.8_MATING CONNECTORS



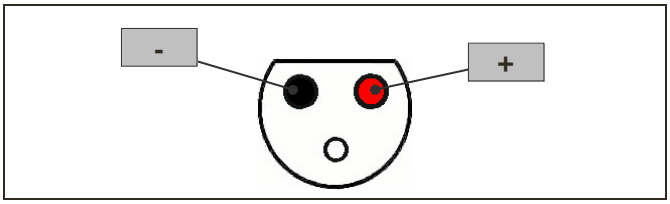
Tractor side feeder cable

***"S1"* = Female COBO connector (rear view):**
+) Red: positive 12V
-) Black: negative



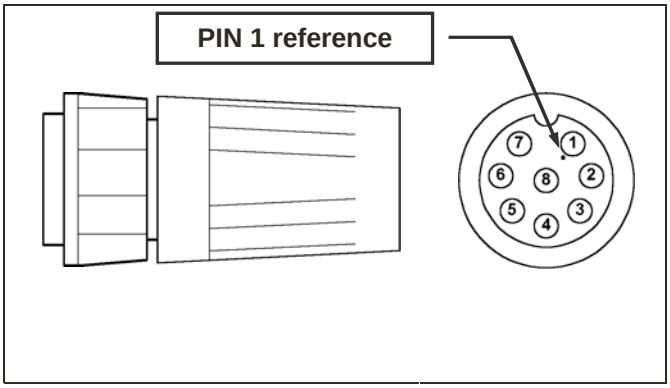
Machine side feeder cable

***"C"* = Male COBO connector (rear view):**
+) Red: positive 12V
-) Black: negative



Signal cable

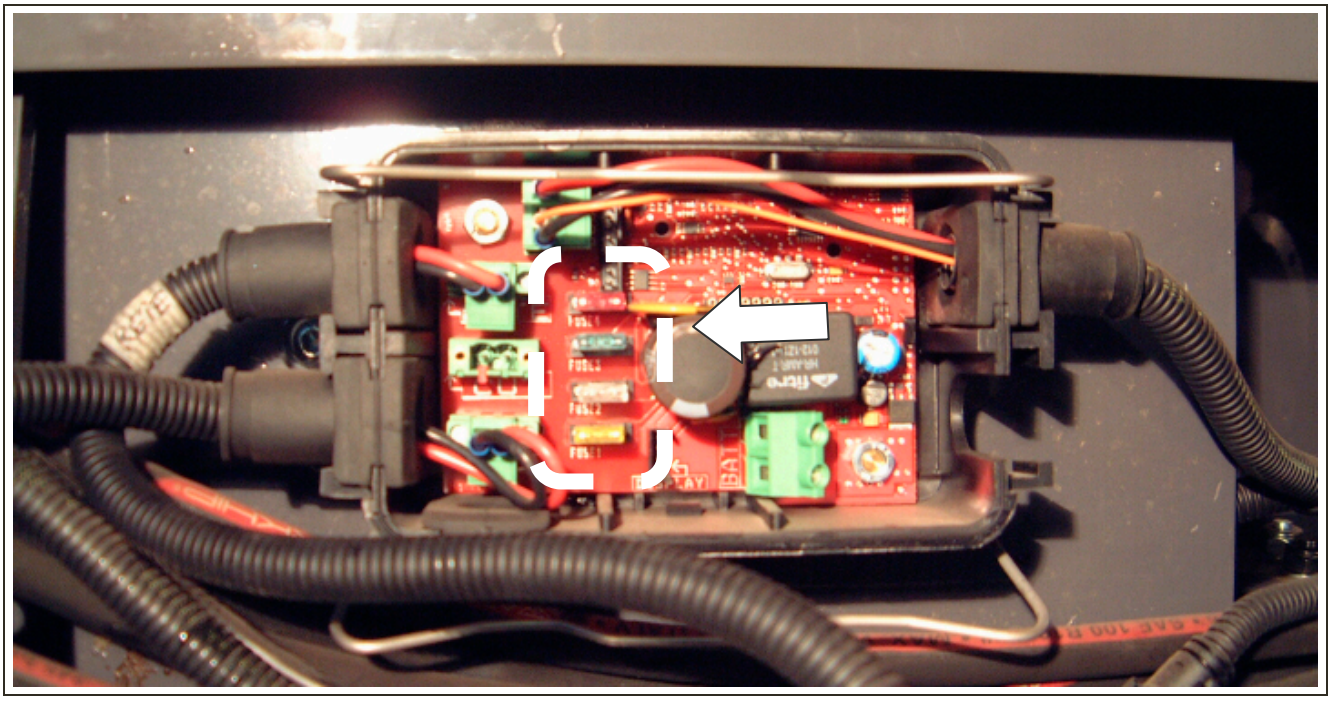
***"CS"* = 8 pin connector LTWBD-08BFFA-L180 (front side)**



11.9_FUSES

The fuses are of the type “RL MINI LAMA FASTON 2,8mm” in accordance with the standard DIN 72581/3F.
Fuses of the POWER BOX **“PB”**:

- FUSE 1: colour yellow 20 AMPERE Fuse for twine motor (MF)
- FUSE 2: colour white 25 AMPERE Fuse for CUT motor (MC)
- FUSE 3: colour green 30 AMPERE Fuse for net motor (MR)
- FUSE 4: colour red 10 AMPERE Fuse for accessories, solenoid valves and lights (GV, PE, ...)



The wording "FUSE 1", "FUSE 2", ...can be seen under the fuses, on the card.

12_PROBLEMS AND CAUSES

These tables summarise the most probable and recurring problems that you may encounter while working. **However, if the solutions suggested do not resolve the problem please contact your Dealer or our Assistance Service directly. They will be able to provide you with the technical advice necessary for resolving the problem.**

12.1_CARDAN SHAFT

PROBLEM	POSSIBLE CAUSE	SOLUTION
Clutch slipping.	Bale too heavy or too big diameter.	Reduce bale weight or diameter.
	Clutch disks worn out.	Replace disks (Follow the instructions provided on cardan shaft manual).
Safety bolt breaks down.	Bale too heavy or too big diameter.	Reduce bale weight or diameter.
Cam safety device continuously trips.	Bale too heavy or too big diameter.	Reduce bale weight or diameter.

12.2_POWER FEED

PROBLEM	POSSIBLE CAUSE	SOLUTION
Tines of the pick-up throw up the forage.	Pick-up speed too high compared to the work speed.	Increase the work speed.
		Reduce the rpm of the tractor PTO.
The tines of the pick-up overtake the forage arriving.	Pick-up speed too slow compared to the work speed.	Reduce the work speed.
		Increase the rpm of the tractor PTO.
The pick-up does not collect over the entire swathe.	The swathe is too wide.	Reform the swathe by making it narrower.
The pick-up does not collect on flat swathes.	The pick-up is too high.	Lower the pick-up using the selector of the tractor.
		Adjust the position of the pick-up support wheels.
The pick-up slips and stops.	The safety bolt is broken.	Reduce the volume of the swathe by half.
		Raise the pick-up by adjusting the position of the support wheels.
		Remove the blockage and replace the safety bolt.
Insufficient gathering of the product.	Tines of the pick-up ruined or missing.	Replace the tines.
The loading arrows do not signal the correct information.	Moving the indicator sensor on the tailgate.	Regulate the sensitivity of the sensor.

12.3_START AND FORMATION OF THE BALE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Insufficient bale density.	Low pressure.	Increase the working pressure.
	Irregular pick-up feed.	Feed the chamber uniformly on both sides.
	Poor hold of the seals on the bale pressure jacks.	Replace the seals of the jacks and tighten the hydraulic fittings.
	Belts of different lengths.	Dismantle the belts and check that they are of identical length.
	Feed speed too high.	Reduce the feed speed.
Bale in the form of a barrel or truncated cone.	The forage is collected and brought only to the centre.	For single swathes load the right and left following the indications on the terminal.
	Swathe too narrow.	Reform the swathe making it wider, fuller and more square.
The bale stops turning.	The torque limiter of the cardan shaft intervenes.	The maximum bale diameter has been exceeded.
		Reset the torque limiter of the cardan shaft (follow the instructions described in the cardan shaft manual).
	Belt stretcher arm rollers blocked.	Check the bearings of the rollers.
Excessive loss of leaves.	Shredding or fragmentation of very dry forage.	Increase the work speed and reduce the PTO speed while baling.
The forage wraps around the drive rollers.	Humidity of the forage too high.	The forage must be conditioned, bale when the humidity is quite low.
	The scraper of the roller is not adjusted well or is worn.	Adjust or replace the scraper.
The belts forming the bale break and the clinches give way.	Presence of foreign bodies in the forage.	Check and if necessary replace or repair the belts.
	The belts are not aligned correctly.	Adjust the belt guiders and/or rollers of the tailgate.
	The bale has exceeded the maximum diameter allowed.	Check the adjustment end of strokes of the bale diameter.
		Check that the electrical system, cables of the machine, connection cables to the tractor, indicators and acoustic signal are working.
The chains jump over the teeth of the gears.	The stretchers are loose.	Stretch the chains by adjusting the stretchers.
	The gears or chains are worn.	Replace the gears or the chains.
The bale diameter does not correspond to the value set.	The potentiometer has lost its synchronisation.	Contact your dealer for re-phasing of the potentiometer.

12.4_BINDING

PROBLEM	POSSIBLE CAUSE	SOLUTION
The turns become loose at the ends of the bale.	The number of turns is insufficient at the ends of the bale,	Do at least two complete turns on each side of the bale.
	The position of the twine guiding tubes on the sides is not correct, too far out.	Adjust the lateral limits by moving the end of stroke of the binder.
Binding of the central part insufficient.	The twine guiding arm moves too quickly.	Reduce the speed of the binder's electrical actuator movement by changing the value set on the control unit.
The twine is not drawn by the bale.	The ends of the twine that protrude from the tubes of the twine guiding arm are not long enough.	Make the twine dangle by a length of at least 20cm.
	The twine does not pass freely.	Adjust the tension of the springs of the twine braking device and check the path of the twine.
	The points of passage of the twine are blocked with dirt or forage.	Check and clean all the points of passage of the twine.
	The twine is not cut correctly.	Replace the blade or adjust the blade support.
The twine is not cut.	The blade is worn.	Turn the blade of the twine cutter around or replace it.
	The twine does not pass the twine cutter blade.	Adjust the stopping screw of the blade support.
The twine does not run over the pulleys.	The twine is knotted in a tangle.	Unravel the tangle.
	The twine is not wrapped around the pulley.	Wrap the twine around the pulley.
	The twine running sensor is badly adjusted.	Adjust the sensor.
	The sensor is broken or defective.	Replace the sensor.
The net does not start to wrap the bale.	The end of the net does not protrude enough.	Make the net dangle at least 20cm.
	The adjusting retainers of the net arm are not adjusted correctly.	Adjust the retainers so as to allow the net arm to approach the roller.
The net is not cut correctly.	The cutting edges of the blade sections are worn away.	Sharpen the blade sections.
	The net roll has insufficient braking.	Increase the braking by adjusting or shimming the lateral spring tie-rods.
The net arm does not stop to release the required metres of net.	The sensor of the net arm is badly adjusted.	Adjust the sensor.
	The sensor is broken or defective.	Replace the sensor.
The metres of net do not come down.	The net counter sensor is badly adjusted.	Adjust the sensor.
	The sensor is broken or defective.	Replace the sensor.

12.5_CUTTER DEVICE

PROBLEM	POSSIBLE CAUSE	SOLUTION
The rotor does not turn.	The cutter engage lever is in NEUTRAL.	Move the lever to the DRIVE position.
	The shear bolts of the safety device are broken.	Replace the shear bolt.
The knives do not engage in the cutter.	Presence of product obstructing the gaps.	Clean the gaps before installing the knives or false knives.
	Defective electrical system.	Check the electrical system: cables, actuators and terminal.
The product is not cut.	The knives are disengaged and not in the work position.	Engage the knives in the work position.
	The knives are not sharp.	Remove the knives and sharpen them.

12.6_HYDRAULIC SYSTEM

PROBLEM	POSSIBLE CAUSE	SOLUTION
The tailgate does not close.	The valve is closed.	Open the valve.
	Some forage is left in the closing area of the tailgate.	Remove the forage.
	The return quick-release coupling of the hydraulic system has been disconnected from the tractor.	Check and correctly insert the return quick-release coupling of the hydraulic system.
The hydraulic system does not work.	The hydraulic outlets have not been activated.	Activate the auxiliary hydraulic outlets from the tractor.
	The hydraulic tubes are not connected properly to the auxiliary connections of the tractor.	Check and correctly insert the quick-release couplings in the auxiliary connections of the tractor.
	Insufficient flow of hydraulic oil.	Check and if necessary top up the hydraulic oil level in the tank on the tractor.
	Pump worn or damaged (low pressure).	Repair or replace the hydraulic pump of the tractor.
	Dirt has accumulated inside the hydraulic circuit.	Flush the system and if necessary clean the hydraulic oil filters.
	The manometer is broken.	Replace the manometer or its capillary tube.
	The jacks leak oil.	Replace the seals of the jacks.
	There are oil leaks in the hydraulic system.	Check the tubes and if necessary tighten the fittings.

12.7_ “F_bus” CONTROL SYSTEM

12.7.1_SYSTEM CONNECTION PROBLEMS

PROBLEM	POSSIBLE CAUSE	SOLUTION
After pressing the on/off Key the display does not light up.	Feeder cable from the battery not connected to the machine cable.	Connect the male COBO plug of the machine cable to the female COBO socket of the feeder cable connected to the battery. Check that the clip of the female connector is inserted in the slot of the male connector to ensure a secure connection.
	Data transmission cable not connected to the terminal.	Insert the connector of the data transmission cable in the female socket of the terminal. Secure it by screwing.
	Inverted polarity.	Invert the cable connections on the terminal blocks of the battery: the red cable provided with a fuse should be attached to the positive "+" clip, the black cable to the negative "-" clip.
	Oxidised contacts on the tractor battery.	Carefully clean the clips. And check the condition of the battery. The voltage produced must be 12V minimum.
	Fuse burnt out or missing.	Check that the fuses in the POWER BOX are intact.

12.7.2_“QUICKTRONIC” PROBLEMS

PROBLEM	POSSIBLE CAUSE	SOLUTION
The machine status PILOT LIGHT is flashing green	The tailgate is open.	Close the tailgate
	The tailgate closure sensor is adjusted badly.	Adjust the sensor.
	The sensor is broken or defective.	Replace the sensor.
One or both of the lower LEDs of the machine status PILOT LIGHT are flashing red.	One or both of the tailgate hooks are not closed: lower right LED = right hook, lower left LED = left hook, both lower LEDs = both hooks.	Close the tailgate
The machine status PILOT LIGHT is flashing orange.	The bale has not been ejected through the tailgate.	Remove the bale.
	The bale is occupying the ejector.	
	The bale ejector sensor is badly adjusted.	Adjust the sensor.
	The sensor is broken or defective.	Replace the sensor.
The machine status PILOT LIGHT is flashing red.	The twine or the net have not been taken by the bale.	Find and eliminate the cause, then restart the binding by pressing the "START-STOP" button.
	The twine or net breaks before finishing the binding or wrapping.	
	The twine or net have run out before finishing binding/wrapping.	

12.7.3_“EASYTRONIC” PROBLEMS

PROBLEM	POSSIBLE CAUSE	SOLUTION
A message appears on the display "Right hook and/or left hook".	The tailgate is open.	Close the tailgate
	A hook is not closed.	
	The tailgate closure sensor is adjusted badly.	Adjust the sensor.
	The sensor is broken or defective.	Replace the sensor.
A message appears on the display "Bale blocked".	The bale has not been ejected through the tailgate.	Remove the bale.
	The bale is occupying the ejector.	
	The bale ejector sensor is badly adjusted.	Adjust the sensor.
	The sensor is broken or defective.	Replace the sensor.
A message appears on the display "Battery insufficient".	Low voltage.	Check the battery or the recharging system of the tractor.
A message appears on the display "Bale binding not correct".	The twine or the net have not been taken by the bale.	Find and eliminate the cause, then restart the binding by pressing the "START-STOP" button.
	The twine or net breaks before finishing the binding or wrapping.	
	The twine or net have run out before finishing binding/wrapping.	
A message appears on the display "PTO blocked during binding".	The PTO of the tractor is not moving.	Engage the PTO.
	The PTO sensor is badly adjusted.	Adjust the sensor.
	The sensor is broken or defective.	Replace the sensor.

13_ACCESSORIES AND KITS (optional)

To improve performance and increase operation of round baler, it is possible to use a set of accessories and kits which can applied to the machine upon request.
Contact your Dealer or our Spare Parts Service to check the accessories and/or the kits which are available and most suitable for the round baler model you purchased.

13.1_ACCESSORIES

These optional accessories, if ordered at the time the round baler is purchased, are fitted directly onto the machine by the Manufacturer:

- Net wrapper.
- Plastic sheet binder.
- Automatic transmission safety device "AFC".
- Loading indicator.
- Brackets to house an additional net roll-holder.
- Housing for additional twine reels, on left side.
- Tyres.

13.1_KIT

These optional kits can be purchased and assembled by the operator on a later stage.
These kits are supplied together with all the necessary instructions for assembling and dismantling them each time work needs so require:

- Move the bale away.
- Electronically controlled bale ejector
- 2nd additional net roll-holder housing, on right side.
- Pair of restricting cups.
- False knives.
- Cardan shafts.

\\TABLE OF CONTENTS

CHAPTER *p.*

1_INTRODUCTION 2
1.1_OPERATOR'S MANUAL 2
1.2_GUARANTEE 2
1.3_USE 2

CHAPTER *p.*

2_CERTIFICATION 1
2.1_OPERATOR'S MANUAL 1
2.2_IDENTIFICATION 1

CHAPTER *p.*

3_TECHNICAL DATA 1
3.1_DIMENSIONS 1
3.2_WEIGHTS 2
3.3_PICK-UP UNIT AND TRANSPORT ASSEMBLY 3
3.4_BINDING 3
3.5_BELTS 4
3.6_TYRES 4
3.7_CARDAN SHAFTS 4
3.8_TRACTOR REQUIREMENTS* 4
3.9_CHARACTERISTICS OF THE BALE 4
3.10_FEATURES OF THE “F_bus” CONTROL SYSTEM 5

CHAPTER *p.*

4_GENERAL SAFETY REGULATIONS 1
4.1_TERMINOLOGY ADOPTED 1
4.2_SAFETY WARNINGS 2
4.2.1_WARNINGS TO THE INDIVIDUAL 2
4.2.2_WARNINGS FOR THE MACHINE 4
4.3_MAINTENANCE IN SAFETY 5
4.4_SAFETY SIGNS 7
4.4.1_PICTOGRAMS 7
4.4.2_REFLECTORS 9
4.4.3_CARDAN SHAFT DECAL 9
4.5_SAFETY DEVICES 10
4.5.1_PROTECTION GUARDS 10
4.5.2_CARDAN SHAFT SAFETY 11
4.5.3_PICK-UP TRANSMISSION SAFETY 11
4.5.4_MECHANICAL TRANSMISSION SAFETY DEVICE (mod.LTR and LTC) 11
4.5.5_AUTOMATIC TRANSMISSION SAFETY DEVICE "AFC" (optional - mod.LTR and LTC) 11
4.5.6_BLADES (mod.LTC) 11
4.5.7_BLADE SECURING SAFETY DEVICE (mod.LTC) 12
4.5.8_CARDAN SHAFT SUPPORT 12
4.5.9_CARDAN SHAFT SAFETY CHAIN 12
4.5.10_SUPPORTS AND CONDUIT GUIDES 12
4.5.11_PARKING CHOCKS 12
4.5.12_TAILGATE SAFETY LOCK DEVICE 13
4.6_CLOTHING 13
4.7_SOUND LEVELS 13
4.8_ECOLOGY AND POLLUTION 13

CHAPTER *p.*

5_TRANSPORT AND HANDLING 1
5.1_LOADING BY RAMP 2
5.2_LOADING BY CRANE 2

CHAPTER *p.*

6_GENERAL DESCRIPTION 1
6.1_MAIN COMPONENTS OF THE ROUND BALER 1
6.2_DESCRIPTION OF THE WORK PROCESS 2

CHAPTER *p.*

7_INSTRUCTIONS FOR USE 1
7.1_BEFORE USE 1
7.2_HOOK UP TO THE TRACTOR FOR TOWING 1
7.3_HOOK UP TO THE TRACTOR FOR WORK 2
7.3.1_"STANDARD" HOOK UP 2
7.3.2_HIGH HOOK UP 3
7.4_CONNECTION OF VARIOUS DEVICES OF THE ROUND BALER 4
7.4.1_CONNECTION OF THE "F_bus" CONTROL SYSTEM 4
7.4.2_CONNECTION OF THE LIGHTING SYSTEM 4
7.4.3_CONNECTION OF THE HYDRAULIC SYSTEM 5
7.4.4_ATTACHMENT OF THE CARDAN SHAFT 5
7.5_OPERATING TESTS 6
7.6_SETTING THE MACHINE UP FOR WORK 7
7.6.1_TWINE LOADING 7
7.6.2_NET LOADING 8
7.6.3_ADJUSTMENT OF THE PICK-UP WHEELS 8
7.6.4_RAKE (mod.LT) 9
7.6.5_FEEDER PLATE (mod.LTR and LTC) 9
7.6.6_CUTTER SYSTEM (mod.LTC) 10
7.6.7_CHOICE OF THE TYPE OF BALE CORE 10
7.6.8_OPERATING PRESSURE SELECTION 11
7.6.9_BALE DIAMETER SELECTION 11
7.6.10_WORK PROGRAM SELECTION 11
7.7_FIELD PREPARATION 12
7.7.1_CONDITIONING 12
7.7.2_SWATHES 12

CHAPTER *p.*

8_OPERATION IN THE FIELD 1
8.1_SWITCHING ON 1
8.2_FEED SPEED 1
8.3_LOADING (OPTIONAL KIT) 1
8.4_FORMATION OF THE BALE 1
8.5_BINDING 2
8.6_BALE EJECTION 2
8.7_UNBLOCKAGE OF THE PRODUCT 3
8.7.1_CLEARING THE PICK-UP (mod.LT) 3
8.7.2_CLEARING THE PICK-UP (mod.LTR and LTC) 3
8.7.3_CLEARING THE ROTOR (mod.LTR and LTC) 4
8.8_STOPPING THE MACHINE 5
8.9_PARKING 5

CHAPTER *p.*

9_MAINTENANCE AND ADJUSTMENT 1
9.1_ROUTINE MAINTENANCE 1
9.2_MAINTENANCE AND ADJUSTMENT OF SAFETY DEVICES 2
9.2.1_REPLACEMENT OF THE PICK-UP SAFETY DEVICE 2
9.2.2_REPLACING THE ROTOR'S MECHANICAL SAFETY DEVICE (mod.LTR and LTC) 2
9.3_CHAIN TENSION ADJUSTMENT 3
9.3.1_ADJUSTMENT OF THE AUTOMATIC STRETCHERS 3
9.3.2_ADJUSTMENT OF THE MANUAL STRETCHERS 3
9.4_ADJUSTMENT OF THE SCRAPERS 5
9.4.1_LOWER ROLLER SCRAPER 6
9.5_BELTS 8
9.5.1_BELT ADJUSTMENTS 8
9.5.2_MAINTENANCE OF THE BELTS 9
9.5.3_CLINCHING OF THE BELTS WITH A "PROFI 5" CLINCHING MACHINE 10
9.5.4_CLINCHING OF THE BELTS WITH A "PROFI 19" CLINCHING MACHINE 11

9.6_ADJUSTMENT OF THE BINDERS....12
9.6.1_DOUBLE TWINE BINDER....12
9.6.2_NET WRAPPER....13
9.7_ELECTRICAL AND ELECTRONIC COMPONENTS....14
9.7.1_SENSORS....14
9.8_ADJUSTMENT OF THE PICK-UP....15
9.8.1_ADJUSTMENT OF THE WORKING HEIGHT OF THE PICK-UP....15
9.8.2_HYDRAULIC RAISING OF THE PICK-UP....15
9.8.3_REPLACEMENT OF THE PICK-UP TINES....15
9.8.4_ADJUSTMENT OF THE PICK-UP CAM....16
9.9_MAINTENANCE AND ADJUSTMENT OF THE CUTTER (mod.LTC)....17
9.9.1_REMOVAL OF THE KNIVES....17
9.9.2_ASSEMBLY OF THE KNIVES OR FALSE KNIVES....18
9.9.3_SHARPENING OF THE CUTTER KNIVES....18
9.10_WHEELS AND TYRES....19
9.11_BOLT TIGHTENING....19
9.12_WELDING....19
9.13_LUBRICATION....19
9.13.1_GREASING....20
9.14_HYDRAULIC OIL....22
9.14.1_AUTOMATIC OILING OF THE CHAINS....22
9.14.2_TANK....22
9.14.3_FILTER....22
9.14.4_MANUAL OILING OF THE CHAINS....23
9.14.5_DEVIATION BOX....23
9.15_CLEANING....24
9.16_AFTER THE FIRST 30 HOURS OF WORK....24
9.17_DAILY CHECKS....25
9.18_SPECIAL MAINTENANCE....25
9.19_STORAGE....26
9.19.1_STORAGE OF THE MACHINE....26
9.19.2_STORING THE “F_bus” SYSTEM....26
9.19.3_STORAGE OF THE CARDAN SHAFT....26
9.19.4_STORAGE OF THE TWINE, NET AND PLASTIC SHEET....26
9.20_BEFORE RESUMING WORK IN THE FIELD....27
9.21_SPARE PARTS....27

CHAPTER *p.*

10_ “F_bus” CONTROL SYSTEM....1
10.1_ “F_bus” SYSTEM COMPONENTS....1
10.1.1_FUSES....1
10.2_PARTS....2
10.2.1_BALE DIMENSION SENSOR....2
10.2.2_TAILGATE CLOSURE SENSORS....2
10.2.3_PTO SENSOR....2
10.2.4_TWINE BINDER ACTUATOR....2
10.2.5_TWINE FEED SENSORS....2
10.2.6_NET WRAPPER ACTUATOR....2
10.2.7_NET ARM REST SENSOR....3
10.2.8_NET COUNTER SENSOR....3
10.2.9_MAXIMUM CHAMBERS SENSOR....3
10.2.10_KNIVES ACTUATOR (mod.LTC)....3
10.2.11_KNIVES ENGAGED SENSOR (mod.LTC)....3
10.2.12_CHAMBER LOADING SENSORS....3
10.2.13_BALE EJECTION DISTANCE SENSOR (optional)....3

CHAPTER *p.*

10-QT_QUICKTRONIC....1
10-QT.1_INSTALLATION....1
10-QT.1.1_FEEDER CABLE....1
10-QT.1.2_DATA TRANSMISSION CABLE....1
10-QT.2_FUNCTIONS OF THE “QUICKTRONIC”....2
10-QT.2.1_DESCRIPTION OF THE TERMINAL....2
10-QT.2.2_FUNCTION OF THE KEYS....2
10-QT.3_NORMAL SWITCHING ON FOR WORK....4
10-QT.3.1_PROGRAMMING....4
10-QT.3.2_TWINE LOADING....6

10-QT.3.3_NET LOADING 6
10-QT.3.4_CUTTER DEVICE 7
10-QT.4_WORK PHASES 8
10-QT.5_COUNTER 10
10-QT.6_MOTOR MANUAL 11
10-QT.7_SETTING 12
10-QT.7.1_VOLUME BUZZER 12
10-QT.7.2_DIAMETER SELF-LEARNING 13
10-QT.7.3_TWINE SELF-LEARNING 14
10-QT.7.4_TYING ARM START-UP DELAY 15
10-QT.8_ALLARM 16
10-QT.8.1_MACHINE STATUS PILOT LIGHT 16
10-QT.8.2_LED 16

CHAPTER *p.*

10-ET_EASYTRONIC 1
10-ET.1_INSTALLATION 1
10-ET.1.1_FEEDER CABLE 1
10-ET.1.2_DATA TRANSMISSION CABLE 1
10-ET.2_FUNCTIONS OF THE “EASYTRONIC”” 2
10-ET.2.1_DESCRIPTION OF THE TERMINAL 2
10-ET.2.2_FUNCTION OF THE KEYS 2
10-ET.3_SWITCHING ON FOR THE FIRST TIME 4
10-ET.4_MENÙ 4
10-FT.4.1_PROGRAM MENÙ 4
10-ET.4.2_WORK MENÙ 5
10-ET.4.3_COUNTER MENÙ 5
10-ET.4.4_MACHINE STATUS MENÙ 5
10-ET.4.5_MOTOR MANUAL MENÙ 5
10-ET.4.6_SETTINGS MENÙ 5
10-ET.5_SETTINGS OF THE MENÙS 6
10-ET.5.1_PROGRAM MENÙ 6
10-ET.5.2_WORK MENÙ 9
10-ET.5.3_COUNTER MENÙ 14
10-ET.5.4_MACHINE STATUS MENÙ 15
10-ET.5.5_MOTOR MANUAL MENÙ 16
10-ET.5.6_SETTINGS MENÙ 17
10-ET.6_SETTING THE MACHINE UP FOR WORK 24
10-ET.6.1_TWINE LOADING 24
10-ET.6.2_NET LOADING 24
10-ET.6.3_CUTTER DEVICE 25
10-ET.7_WORK PHASES 27
10-ET.8_ABBREVIATIONS 31
_A WORKING CYCLE 32

CHAPTER *p.*

11_TABLES AND DIAGRAMS 1
11.1_TYPES OF OIL AND GREASE 1
11.2_LUBRICATION 1
11.3_MAINTENANCE WORK 2
11.4_TORQUE SETTINGS 3
11.5_TYRE PRESSURE VALUES 3
11.6_BELTS PATHS 4
11.7_DRIVING LIGHTS ELECTRICAL SYSTEM 5
11.8_MATING CONNECTORS 6
11.9_FUSES 7

CHAPTER *p.*

12_PROBLEMS AND CAUSES....1
12.1_CARDAN SHAFT....1
12.2_POWER FEED....1
12.3_START AND FORMATION OF THE BALE....2
12.4_BINDING....3
12.5_CUTTER DEVICE....4
12.6_HYDRAULIC SYSTEM....4
12.7_ “F_bus” CONTROL SYSTEM....5
12.7.1_SYSTEM CONNECTION PROBLEMS....5
12.7.2_“QUICKTRONIC” PROBLEMS....6
12.7.3_“EASYTRONIC” PROBLEMS....7

CHAPTER *p.*

13_ACCESSORIES AND KITS (optional)....1
13.1_ACCESSORIES....1
13.2_KIT....1

Note:

USATE SEMPRE RICAMBI ORIGINALI
ALWAYS USE ORIGINAL SPARE PARTS
IMMER DIE ORIGINAL-ERSATZTEILE VERWENDEN
EMPLOYEZ TOUJOURS LES PIECES DE RECHANGE ORIGINALES
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